Satterthwaite & Porter 3

OBSERVATIONS

IN

ONE HUNDRED CASES

OF

CARCINOMA.

BY

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AND

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CURATOR TO THE PRESBYTERIAN HOSPITAL.

[*REPRINTED FROM THE NEW YORK MEDICAL JOURNAL, SEPTEMBER 1879, WITH ADDITIONS.*]

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1879.

CARCINOMA:

ITS

VARIETIES, DIAGNOSIS, PROGNOSIS, AND TREATMENT.

BY

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OBSERVATIONS IN ONE HUNDRED CASES OF CARCINOMA.

This paper is based upon one hundred unselected cases of carcinoma, most of which have come into the hands of one of the authors (Dr. Satterthwaite) through his official connections with the St. Luke's and Presbyterian Hospitals, the Pathological Society of New York, and the College of Physicians and Surgeons. Some have been derived from other sources, and acknowledgment is here made to Dr. G. L. Peabody, member of the New York Pathological Society and Pathologist to the New York Hospital, for permission given to inspect microscopic preparations, and for his assistance in securing their clinical histories. Thanks are also due to Dr. Abraham Mayer, member of the New York Pathological Society and Pathologist to the Manhattan Eye and Ear Hospital, for his drawings, which will be found represented in the text, and for his clinical history of a case; also to Dr. R. W. Amidon, member of the New York Pathological Society and formerly House Physician to the New York Hospital, for his drawings and case; also to Dr. Stoyell C. Parsons, for his painstaking exertions in securing a very large number of full clinical histories. It is a point of interest that every one of the cases has been followed by inquiries carried up to January 1, 1879, and that, in this way, fifty-seven have been completed from the inception of the disease to death. Though it might have been desirable to have a larger

number of cases from which to deduce conclusions, still it was thought best, at this time, to summarize, rather than to wait until a hundred fatal cases had been recorded. The difficulty in obtaining trustworthy information after death, to be used in a statistical way, is very great, and, indeed, in many cases is a matter of impossibility. In waiting, one has to run the chance of being forced to throw away much that has been collected. The authors have found, in the present instance, that large numbers of observations on this subject were sacrificed, mainly from the fact that the histories, which would have rendered them complete, had not been entered in hospital books, or had been recorded so imperfectly that they were of no value. It is proper to say, however, that important improvements have recently taken place in this respect, though even now the hospital staffs are often too small to give the proper attention to this matter; consequently there is loss to our statistical information that can not be made up. While therefore these hundred cases are said to be unselected, in the sense that no one was omitted that promised to yield important data, there were fully fifty more which, for the reasons named, were unavailable. It will be seen by referring to the tables that ninety-five per cent. were examined microscopically, either by one of the authors alone, or in conjunction with competent microscopists in the city. It is believed, therefore, that the proper amount of precision has been reached in reference to the determination of the exact histological variety of the growth, and that, consequently, our conclusions will be based upon the most definite standard that can be applied at present. If they differ from those of Paget, Winiwarter, Thiersch, and others, it is due to the laws which govern cancer in our midst, i. e., cancer as it is recognized at present by the most certain criterion, viz., the microscope.

With reference to the present standard authorities, it is proper to say, however, that Paget nowhere states whether his two hundred and seventy-six cases of scirrhus, observed by himself, had been examined microscopically; and further, these statistics are based on cancers (*see* p. 634, "Surgical Pathology," 1870) of the breast. It may also be said of Wini-

warter's cases that he does not tell whether the examinations were made by himself or others.

It is also evident that in the older classes of statistics, as those of Birkett,* the close distinction between carcinoma, sarcoma, myxoma, adenoma, and fibroma, now essential, was not maintained.

It is to be said here that, in using the word cancer, reference is always made to carcinoma, and to no other of the malignant growths, such as sarcoma, myxoma, etc., that are included by some English writers under the name of cancer.

The main object in preparing this paper was a practical one, and involved the following considerations: 1. Whether the microscope may be used as a means of accurate diagnosis. 2. Whether treatment by the knife secures for the patient the longest expectation of life. 3. What has proved to be the best treatment.

Though the results are not as satisfactory as the authors desired, still it is believed that some practical conclusions of value can be drawn. Unfortunately there exist at present insurmountable difficulties in obtaining solutions to some of the most interesting questions. The most remarkable cases can best be studied in the appended tables, where each is analyzed.

The operators have been as follows: Dr. Alfred C. Post, 12 cases; G. A. Peters, 9; C. K. Briddon, 7; J. L. Little, 4; T. E. Satterthwaite, 4; Weir, 4; C. M. Allin, 3; Gurdon Buck, 3; Markoe, 3; Sabine, 3; Sands, 3; Shrady, 3; McBurney, 2; D. M. Stimson, 2; L. A. Stimson, 2; A. H. Buck, Detmold, Dumond, Hanks, Hinton, Kelsey, Newman, Mount, H. D. Noyes, Polk, Beverley Robinson, R. W. Taylor, 1 each.

The classification adopted is essentially practical, and, in fact, is recognized, if not adopted, by leading pathologists. It divides carcinoma into five groups, viz.: 1. Epithelioma; 2. Scirrhus; 3. Encephaloid or medullary; 4. Colloid; 5. Cauliflower growths.

1. The epitheliomata include the forms known in Germany

* "Diseases of the Breast," 1850.

as the flat or superficial epithelioma, in England as the rodent ulcer, and in various places as the lupoid, though the latter name is apt to lead one away toward a lesion whose nature is fundamentally different. This latter variety (rodent ulcer) is most frequently seen about the face, especially in the neighborhood of the eye. There is no doubt that it has, at times, been confounded with lupus vulgaris, and its diagnosis in any case is more difficult than any other of the forms with which we have to deal. To this point we shall again refer. Indeed, we are usually called upon to differentiate it from either lupus or syphilis, both of which are apt to invade the face and destroy progressively. The distinction is thus characterized:

"Lupus occurs in the young adult; rodent ulcer in the decline of life. Lupus is a strumous affection; rodent ulcer originates in persons previously healthy. Lupus commences as a low tuberculous elevation of the skin; rodent cancer as a firm, uncolored nodule."—"In lupus there may be more than one tubercle; the pimple of rodent cancer is solitary. Lupus first scales before it breaks; rodent cancer excoriates and then scales and bleeds. Lupus may cicatrize and heal at any time; rodent cancer proceeds with, at most, but a temporary and partial healing near the edge. Syphilis is rapid; rodent cancer slow. There is [in lupus] no solid border, but a sharp edge; in syphilis it is a ragged ulcer, surrounded by a violet halo of injected skin. It [lupus] has no hardness or even firmness. In the early stage it is difficult to distinguish from epithelial cancer, certainly until infection occurs. The microscope invariably displays, in epithelial cancer, cells of an exaggerated epithelium, which are usually, though not constantly, absent in the rodent."—(Moore, "Rodent Cancer," London, 1867.)

According to Mr. Arnott ("Cancer, its Varieties," etc., London, 1872) rodent cancer does not possess sufficiently distinct characteristics to warrant its being relegated to a separate class. Indeed, taking well-marked examples of rodent ulcer, Mr. Arnott has found in them, occasionally, those "bird's-nest" formations which are the crowning peculiarity of epithelioma.

Mr. Hulke has found in examinations of rodent ulcer that the characters were those of a dense infiltration of the submucous connective tissue, with masses or bead-like processes, having cellular elements similar to those of the rete mucosum. This we have also observed, and our present conviction is that there is a growing inward of the rete, but for some reason, which in some way depends upon the locality of the growth, it does not extend as rapidly or as deeply as the typical form in well-advanced epithelioma of the lip; and we consequently fail to find the epidermic balls which are a constant accompaniment of the other variety, and have very justly come to be regarded as pathognomonic. We are glad to be able to know that many other excellent observers take this view.*

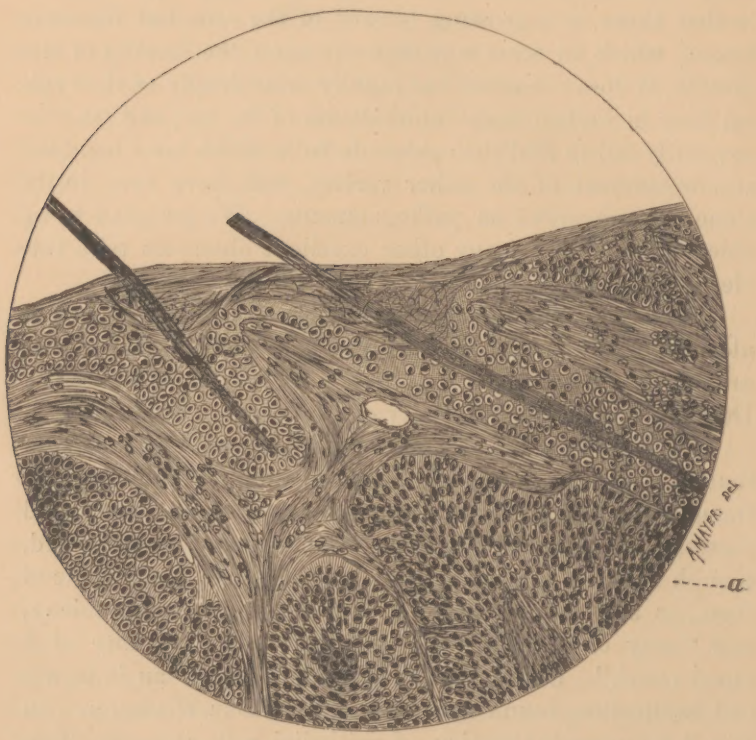
The accompanying drawings (Figs. 1 and 2), of rodent ulcer, are by Dr. A. Mayer; the clinical character of the growth was determined by Dr. R. W. Taylor, Professor of Dermatology in the University of Vermont.

It is stated in the description of the case by Dr. Mayer that this growth may be classed under the epitheliomata, though it would be known clinically as a rodent ulcer, and possesses no "nests." In Fig. 1 the papillæ are infiltrated, though not to a large extent, by epithelial elements; some of them, as at *a*, are massed together forming a small colony, and "may be a proliferation of cells in the vicinity of a blood-vessel." Underneath the papillæ there is an immense cell infiltration, round and oval, epithelial in character. In Fig. 2 a deeper infiltration of epithelial cells is seen. This in the main tallies with the ideas entertained by the authors cited, that rodent ulcer is a low or mild form of epithelioma, in which, as before said, the "birds'-nests" do not occur, because the production of epithelial elements is not particularly active or rapid. A still lower form of epithelioma is now classed as epithelial warts, which often occur as brown excrescences on the faces of old people. If burned

* Warren, "Boylston Medical Prize Essay," Boston, 1872. Tilbury and Thomas Fox, who also believe that the growth originates from the hair sheath, by a process of budding.—"Lancet," December 28, 1878.

down they appear again. In occasional instances it would appear that they take on an exuberant growth and become destructive epitheliomata. Removal by the knife is recom-

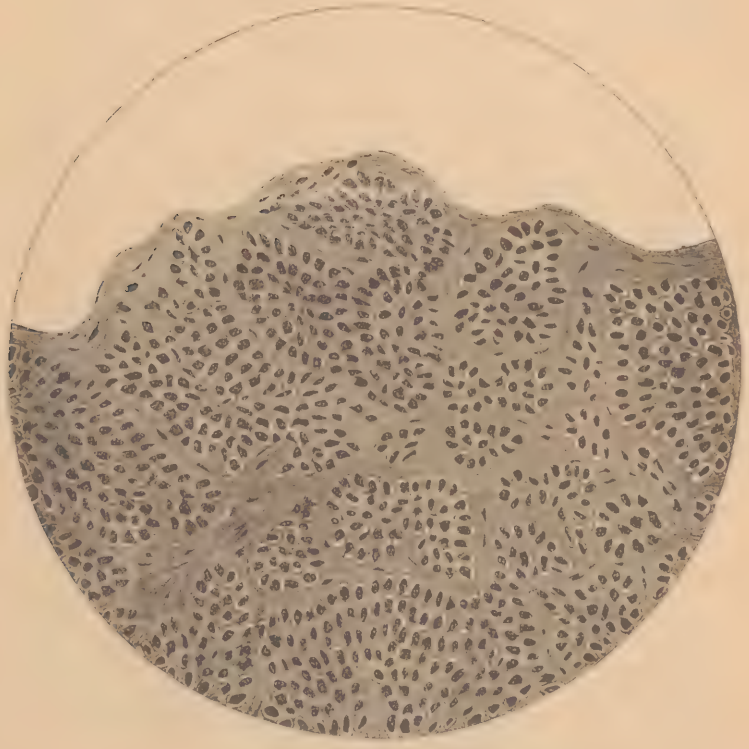
Fig. 1.



mended when they take on an active growth, and is undoubtedly the best form of treatment. It appears by no means certain, as the histories of our cases show, that we can always, or even in most instances, determine the exact character of a rodent ulcer by the microscope: though it bears the evidence of being made up of collections of elements that resemble epithelium, and we even find small collections at scattered points, the diagnosis should rest largely upon the gross appearances, the past history, and especially the effect of antisyphilitic remedies. It will be found in the record of one case that even antisyphilitic treatment will not at once differentiate when syphilis is sus-

pected, for an epithelioma will sometimes improve under the mercurials and iodides for a short time: if, however, it heals progressively under treatment, it is a case of syphilis. Usu-

Fig. 2.



ally the gross appearances, as already given, will furnish sufficient data to determine which of the three diseases we have to deal with; we should, however, search for a new formation of epithelial elements, and, finding them, we may be pretty confident, if the other data fail us, that we have to do with one of the forms of the epitheliomata.

On the other hand, if we fail to find the epithelial collections, we should not, therefore, be confident that the disease is not rodent ulcer (epithelioma). In one form of epithelioma, as our cases show, there may be times, as in the early period or

if the destruction of tissues has about kept pace with its new formation, when no epithelial nests may be found. In the one instance they have not yet developed, in the other they have been thrown off. If, however, the microscopic section reveals epithelial nests, you may be almost positively sure not only that you have had a real case of epithelioma, but that it will return and advance progressively to death.

Fig. 3.

T. E. S., del.

Fig. 3 represents an epithelioma. It will be seen in this instance, that the development of nests takes place in the interpapillary spaces, and it is here chiefly that they are found —certainly before extensive ulceration has removed them and the adjacent papillæ. At the same time that this growth and reproduction takes place in the elements of the Malpighian layer, similar changes are found in all the epithelial structures adjacent, viz., the sweat and sebaceous glands and hair follicles. The birds'-nests, *a a*, are nothing but the epi-

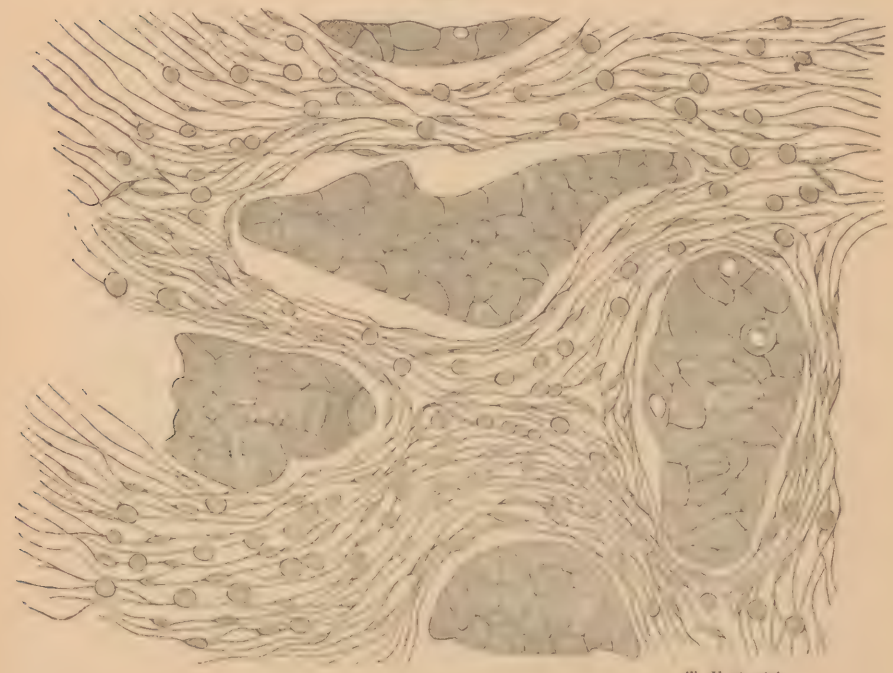
thelial elements, so compressed concentrically that they are forced into round balls, and made dense, dry, and horny by the excessive pressure to which they have been subjected. In our experience we have never seen anything that could be mistaken for them in any other normal or pathological condition of the body. As illustrating the exact place in which the balls are usually found, it may be said that they will very generally be found surrounded by "prickle cells," or in other words, the epithelial elements of the Malpighian layer.

2. *Scirrhous Carcinoma.*—The most common of all carcinomas in our experience is scirrhous, of which we found forty-one in one hundred cases. There are many varieties, such as the nodular, diffuse, *en cuirasse*, atrophic, etc. It is most commonly found in the female breast. The clinical history will be given at some length further on. When the microscopic section is examined, it presents characters that differentiate it easily from every other pathological condition. One sees collections of epithelial bodies grouped together in masses or irregular forms; or, if the section favors it, it may be seen that there are hollow networks filled exclusively by epithelial bodies. There are branching spaces irregularly pouched, which bear more resemblance to dilated lymphatic vessels than to anything else. The epithelial elements are closely crowded together without intervening material, and they take on various forms, the result of pressure. The presence of nuclei is not essential, as will be seen in the accompanying figures, where there are almost no nuclei; but for this particular specimen no acetic acid was used, and hence the nuclei are not very apparent. Some of the elements occasionally undergo a sort of colloid change, and others exhibit hollow spaces or vacuoles. The epithelial masses are kept widely separated from each other by a large amount of the connective tissue known as fibrillated, and if the growth is rapid there is an extensive infiltration of this tissue with lymphoid elements. These appearances are shown in the accompanying drawing (Fig. 4), which is as nearly as may be an exact copy of the microscopic section.*

* Being desirous of securing as faithful a picture of the real appearances in the different forms of carcinoma as possible, thin sections were

The size of the epithelial elements has nothing to do with the determination of the growth, though in scirrhus of the breast they are usually large and have correspondingly large

Fig. 4.



T. E. S., del.

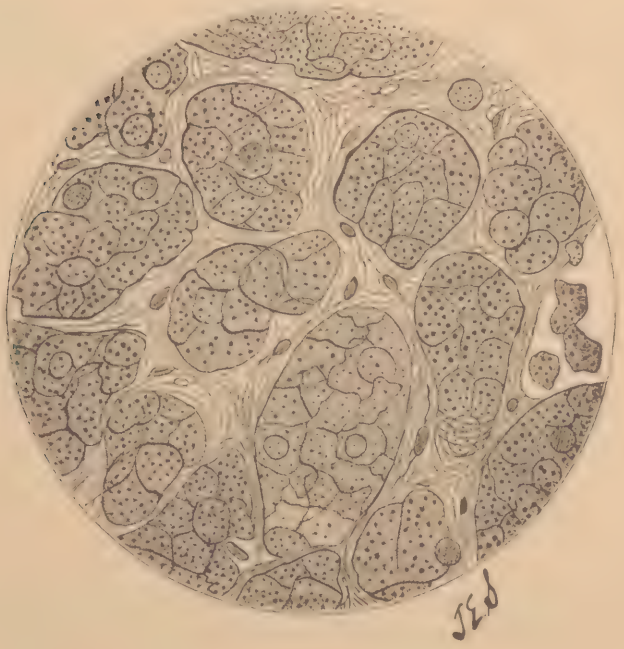
nuclei. But, as is well known, nuclei are not essential elements in cells, as they may be evoked by various agents, or caused to disappear by others, as electricity or a stream of oxygen gas. The only neoplasm that is sometimes difficult to distinguish from scirrhus is adenoma; now, this latter is a rare affection in the first place, and in the second, one that is easily differentiated by a glance at the interior of the epithe-

photographed by a well-known gentleman of this city. Much labor and pains were spent upon them, but they proved to be useless, possessing neither sufficient sharpness, flatness, nor depth. These defects in photography, the authors believe, have not been surmounted at present, and the most truthful pictures are still those that are drawn by a careful observer from the eye-piece of his microscope.

lial masses; in adenoma they are pierced, in carcinoma they are solid. Adenoma presents the appearances of ordinary secreting gland structure.

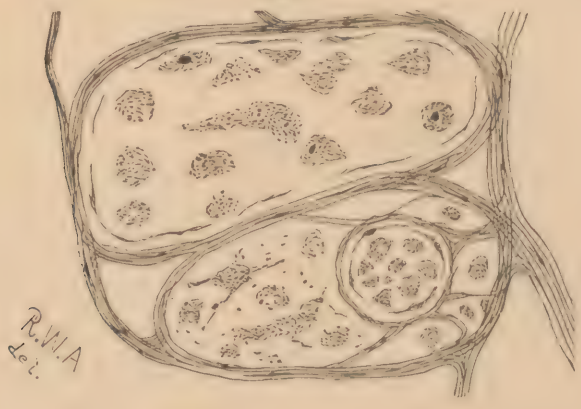
3. *Encephaloid or Medullary Carcinoma.*—This is commonly supposed to be the most rapid in growth and malignancy of all forms. It is apt to be found in the internal organs, such as the liver, omentum, etc., either primarily or in connection with scirrhus of external parts, as the breast. Some curious facts in reference to it have been found in individual cases. It is quite often not detected or suspected during life, but the histological character of medullary cancer is clear and unmistakable. The epithelial elements are grouped together closely, as in scirrhus, but the intervening fibrous tissue is very slight, and often hardly more than sufficient to keep the masses separate from one another. The gross appearances are therefore quite peculiar, for while scirrhus is firm, hard, gristly, cutting often much like a potato, encephaloid is soft, almost to liquefaction, much like brain matter, hence its name.

FIG. 5.



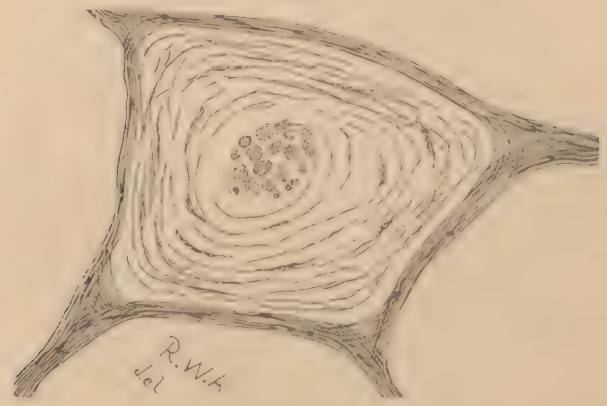
The preceding drawing (Fig. 5) was taken from such a specimen, and is a good example of the disease. Sometimes there are forms that partake of the characters of both scirrhus and encephaloid, but this is comparatively rare.

Fig. 6.



4. *Colloid Carcinoma* is a peculiar and rare variety, found most frequently in the intestinal tract. It is doubtful if it ever occurs purely as a colloid; for if the form is colloid in one

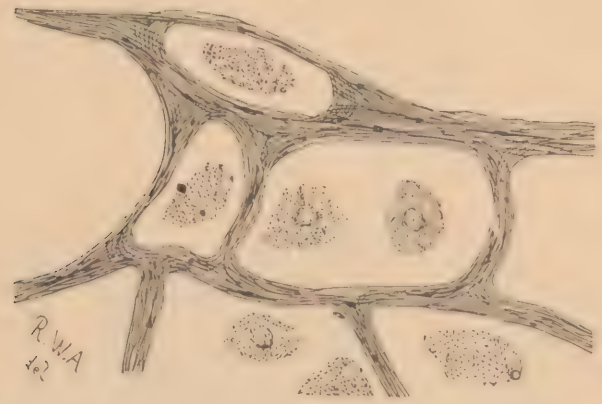
Fig. 7.



part it is apt to be scirrhus or encephaloid at another. The accompanying drawings (Nos. 6, 7, 8, and 9), by Dr. R. W.

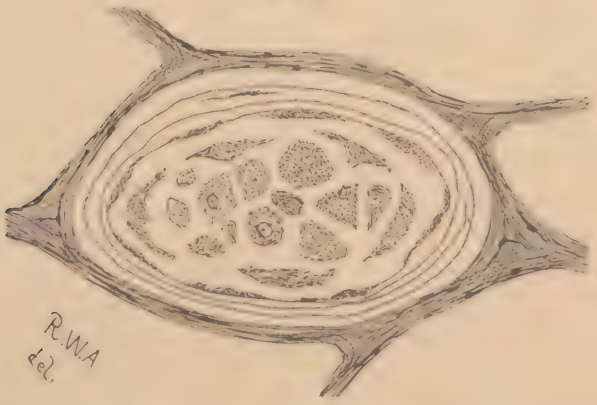
Amidon, illustrate the various appearances under which it is seen. The epithelial elements are grouped together in masses, and then, undergoing colloid change, are disposed to arrange themselves concentrically in the tubes which contain them. Often, as in Fig. 6, the outlines of the corpuscles are ex-

Fig. 8.



tremely indistinct, and the concentric disposition of the elements is not clear.

Fig. 9.



In Figs. 7 and 9 the epithelial elements are arranged in concentric laminæ.

In Fig. 8 the spaces contain one or more degenerate epithe-

lial bodies, which are surrounded by structureless soft colloid matter not here represented.

5. *Cauliflower Growths.*—It is often difficult to gain a satisfactory idea of the neoplasms found in the uterus and known as cauliflower growths, owing mainly to the fact that the portions removed by the surgeon and given to the microscopist for examination are shreds torn off from the surface, and do not exhibit the real characters of the deeper structures; or it may be that the growth is as yet undeveloped and does not contain anything peculiar.

Fig. 10.

One often finds in such cases nothing but the enlarged or elongated papillæ, with an excessive epithelial covering on

each stalk. It must be remembered, however, that such appearances belong also to papillomata, which are quite benign, at least in their inception. But if we look down into the mucous and submucous or muscular layer, we shall be apt to find the collections of epithelial bodies, that now form our criterion for deciding on the name of the growth, closely packed together. Such, at least, is our notion of a classical case; but, as in most instances we are unable to get the whole diseased mass, the microscopic examination is apt to yield negative results. Fig. 10 illustrates such a case, and it will frequently resemble the real appearances, as they are seen. It is a representation of nothing in reality but a papillary growth. It consists of one or more stout stalks of great length, made up of ordinary fibrous tissue, and giving off at acute angles numbers of smaller branches and branchlets, all of them covered with cylindrical epithelium. At *a* there is a cross-section of an interpapillary space, which looks like the cross-section of a follicle, and is in fact one, since the mucous follicles are mere indentations of the mucous membrane, such as these are.

In drawing our conclusions it has seemed best to limit them to the scirrhus and epithelioma group, because the others included too few cases for any such use. At the same time they will all be found arranged in tabular form, so as to permit ready reference.

In taking up the matter of scirrhus, attention is first drawn to those that were accessible to the knife, so that the questions of operative interference in these more common cases may be duly considered apart by themselves.

EXTERNAL SCIRRHOUS

No. of Case.	Initials.	Age.	Sex.	Birthplace.	Condition.	Occupation.	Date when the growth was first noticed.
1	A. M.	43	M.	Scotland.	Married.	Saddler.	Oct., '75.
2	L. C.	48	F.	Ireland.	Married.	Housewife.	Sept., '77.
3	Mrs. P.	40	F.	England.	Married.	Housekeeper.	April, '74.
4	C. M.	46	F.	Switzerland.	Married.	Washerwoman.	March, '77.
5	M. R.	45	F.	Ireland.	Married.	Servant.	Nov., '78.
6	E. S.	36	F.	England.	Married.	Housewife.	Dec., '75.
7	H. M.	45	F.	United States.	Single.	Dressmaker.	April, '70.
8	S. T.	45	F.	United States.	Married.	Housewife.	Oct., '74.
9	E. W.	66	F.	England.	Widow.	Not stated.	Oct., '77.
10	A. K.	35	F.	United States.	Married.	Housewife.	Feb., '76.
11	Mr. K.	61	M	United States.	Widower.	Clothier.	Oct., '73.
12	C. H.	50	F.	Ireland.	Single.	Milliner.	Oct., '74.
13	W. P.	46	F.	Ireland.	Married.	Seamstress.	Jan., '73.
14	M. A. W.	48	F.	Ireland.	Widow.	Cook.	Jan., '69.
15	E. T. S.	63	F.	United States.	Widow.	Not stated.	Nov., '76.
16	Mrs. A.	33	F.	Ireland.	Married.	Housewife.	May, '76.
17	Mrs. L.	76	F.	Not stated.	Married.	Lady.	Sept., '57. Sept., '59.
18	Mrs. C. S.	56	F.	United States.	Married.	Nurse.	Dec., '73.
19	J. R.	44	M.	Not stated.	Not stated.	Carpenter.	Dec., '72.
20	A. G.	42	F.	Ireland.	Single.	Child-nurse.	Jan., '77.
21	H. B.	37	F.	Ireland.	Married.	Housewife.	Aug., '77.
22	A. F.	42	F.	England.	Widow.	Dressmaker.	April, '78.
23	M. J.	43	F.	Ireland.	Single.	None.	Feb., '72.
24	S. S.	36	F.	Ireland.	Single.	Dressmaker.	Sept., '76.
25	E. A.	68	F.	Ireland.	Single.	None.	March, '73.
26	M. A. J.	53	F.	New York.	Married.	Lady.	Dec., '75.
27	C. F. C.	50	F.	United States.	Married.	Lady.	Dec., '71.
28	R. R.	44	F.	United States.	Single.	Housekeeper.	March, '76.
29	A. McK.	52	F.	Ireland.	Married.	Housekeeper.	Jan., '76.
30	C. S.	48	F.	New York.	Widow.	Housekeeper.	Aug., '76.
31	A. S.	51	F.	England.	Married.	Housekeeper.	Jan., '77.
32	Mrs. S. J.	36	F.	.....	.....	.....	.....
33	Mrs. M. B.	47	F.	New York.	Widow.	Housewife.	Aug., '76.
34	Mrs. D.	65	F.	Scotland.	Married.	Seamstress.	March, '76.
35	Mrs. A. McN.	60	F.	Ireland.	Widow.	Not stated.	Oct., '77.
36	Mrs. C. H.	36	F.	Germany.	Married.	Housewife.	July, '74.
37	K. O. C.	28	F.	Ireland.	Married.	Housewife.	Oct., '73.
38	M. A. P.	55	F.	United States.	Married.	Not stated.	Not stated.
39	C. O'B.	65	F.	Ireland.	Married.	Housewife.	June, '77.
40	F. B.	59	M.	Germany.	Not stated.	Cabinetmaker.	Dec., '72.
41	G. O. K.	60	M.	United States.	Married.	Agent.	Dec., '76.

CARCINOMA.

Locality.	Assigned cause.	Family history of cancer.	Enlargement of lymphatic glands.	Locality and name of glands involved.	When first noticed to be enlarged.
Right Steno's duct.	None.	None.	None.	.....	.....
Right breast.	Abscess 26 y'rs ago.	None.	None.	.....	.....
Os uteri.	None.	None.	None.	.....	.....
Right breast.	None.	Yes; also of phthisis.	Yes.	Axillary and supra-clavicular.	June, '78.
Breast.	Cold.	Not stated.	Not stated.	.....	.....
Left breast.	Blow.	None.	.....	.....	.....
Right breast.	Blow.	None.	Not stated.	.....	.....
Breast.	Not stated.	Yes.	Yes.	Axillary.	Oct., '74.
Inside the left nostril.	None stated.	Yes.	Not stated.	.....	.....
Right breast.	Severe exercise.	None.	Yes.	Axillary.	May, '76.
Right breast.	None.	Phthisis.	None.	.....	.....
Right breast.	Slight blow.	None.	Not stated.	.....	.....
Left breast.	Abscess.	Phthis. and Tumor.	Yes.	Axillary.	Feb., '74.
Right nipple.	Not stated.	None.	Not stated.	.....	.....
Ulcerated nipple.	None.	None.	Yes.	Axillary.	April, '77.
Breast.	Not stated.	None.	Yes.	Axillary.	Aug., '78.
Right breast. Left breast.	None.	None.	Yes.	Axillary.	.....
Right breast.	Uncertain.	None.	Yes.	Axillary.	.....
Neck.	Not stated.	Phthis. and syphilis.	Not stated.	.....	.....
Right breast.	None.	None.	Yes.	.....	.....
Right axilla; breast.	None.	Yes.	Yes.	Prim. axil.	Aug., '77.
Left breast.	None.	None.	Yes.	Axillary.	Nov., '73.
Left breast.	Injury 10 y'rs bef'e.	None.	Not stated.	.....	.....
Rectum.	None.	Yes; also phthisis.	None observed.	.....	.....
Left breast.	Not stated.	None.	Yes.	Axillary.	Sept., '78.
Left breast.	None.	Yes.	Yes.	Axillary.	Oct., '77.
Breast.	Not obtained.	Uncertain.	Yes.	Axillary.	Dec., '72.
Right breast.	Bruise.	None.	Yes.	Axill'y and sup. clav'r.	March, '76.
Left breast.	No cause known.	Yes.	Yes.	Axillary.	Jan., '77.
Right breast.	Abscesses.	Probably.	Yes.	Axillary.	Not stated.
Left breast.	Mammary abscess.	None.	Yes.	Axillary.	A few mos. bef. operation.
Breast.	.....	.....	.....	.....	.....
Uterus.	None.	None.	None.	.....	.....
Left breast.	Hurt.	None.	Yes.	Axillary.	Not stated.
Left breast.	None.	None.	Yes.	Axillary.	July, '78.
Right breast.	Blow.	Yes.	None.	.....	.....
Right breast.	None.	None.	Not stated.	.....	.....
Right breast.	Blow.	None.	Not stated.	.....	.....
Left breast.	None.	None.	Yes.	Axillary.	Oct., '78.
Back.	None.	None.	Yes.	Axillary.	July and Aug., '73.
Superior maxilla.	Bad tooth.	None.	None.	.....	.....

EXTERNAL SCIRRHOUS

No. of Case.	Was any treatment adopted before operation?	Date of operation.	Condition of general health previous to symptoms of cancer.
1	No.	April, '77. November, '78.	Syphilis.
2	Local anodynes.	September, '78.	Gen'l debility for 8 years.
3	Not stated.	September, '74.	Syphilis.
4	No.	June, '78.	Good.
5	Not stated.	December, '78.	Not stated.
6	Anointed and rubbed by quack.	Aug., '76; Sept., '77.	Good.
7	Not stated.	May, '74.	Good.
8	No.	October, '76.	Good.
9	No.	October, '78.	Good.
10	Not stated.	June, '76.	Good.
11	Fowler's solut'n.	October, '78.	Tertiary syphilis.
12	Not stated.	Jan., '75; May, '76.	Fair.
13	Not stated.	June, '74.	Good.
14	Leeching.	Dec., '72; Aug., 73; Oct., '73.	Good.
15	Electrolysis.	November, '78.	Good.
16	No.	May, '78.	Good.
17	....	July, '75; Oct., '77; Feb., '78.	Good.
18	Electrolysis.	No cutting operation.	Good.
19	Incision.	April, '73.	Not stated.
20	Not stated.	July, '77.	Good.
21	No.	September, '78.	Good.
22	Not stated.	January, '74.	Good.
23	Arsenical paste.	February, '74.	Good.
24	No.	September, '78.	Chronic diffuse nephritis.
25	No.	March, '77; Nov., '77;	Cephalalgia.
26	Not stated.	Feb., '78; May, '78.	
27	Pressure.	October, '76.	Good.
		June, '72.	Good.
28	No.	March, '78.	Good.
29	Not stated.	January, '78.	Good.
30	Not stated.	April, '77; Jan., '78; June, '78; Sept., '78.	Good.
31	Arsenic intern'y.	June, '77.	Good.
32	... .	June, '76.	Not stated.
33	Not stated.	October, '76.	Good.
34	No.	August, '78.	Always poor.
35	Not stated.	July, '78.	Good.
36	No.	May, '76.	Good.
37	Not stated.	April, '75.	Good.
38	Not stated.	November, '76.	Good.
39	No.	October, '78.	Good.
40	White paste.	Feb., 73; August, '74.	Good.
41	Poult'd and lan'd.	April, '77.	Good; hard drinker.

CARCINOMA.

Was pain relieved by the operation?	Was the growth more rapid when it recurred?	Date of recurrence.	Interval between period when first noticed and first removal.	Number of recurrences.	Number of operations.
Yes.	Yes.	October, '77.	18 months.	One.	Two.
Yes.	.....	.....	12 months.	None.	One.
Yes.	Difficult to say.	February, '75.	5 months.	One.	One.
.....	.....	.....	15 months.	.....	One.
Yes.	.....	.....	1 month.	None.	One.
Yes.	Yes.	July, '77.	8 months.	Two.	Two.
Yes.	Yes.	Not stated.	49 months.	One.	One.
Somewhat.	Yes.	October, '76.	24 months.	One.	Two.
Partially.	Yes.	November, '78.	12 months.	One.	One.
No.	Yes.	August, '76.	4 months.	One.	One.
Yes.	.....	.....	60 months.	None.	One.
Partially.	Yes.	April, '76.	3 months.	One.	Two.
Yes.	Yes.	Not stated.	17 months.	One.	One.
Yes.	Yes.	April, '73.	47 months.	Two.	Three.
Yes.	.....	.....	24 months.	None.	One.
Yes; temporarily.	No.	August, '78.	24 months.	One.	One.
Yes.	.....	.....	214 months.	Four.	Three
Yes.	.....	.....	.....	.....	.....
Not stated.	.....	.....	4 months.	.....	One.
Yes.	Not known.	.....	6 months.	One.	One.
Yes.	.....	.....	13 months.	None.	One.
Partially.	Not stated.	Not known.	9 months.	One.	One.
Yes.	.....	.....	24 months.	None.	One.
.....	.....	.....	24 months.	None.	One.
Partially.	Yes.	Not stated.	48 months.	Five.	Four.
For 1 year, yes.	No.	October, '77.	10 months.	One.	One.
Not stated.	Yes.	November, '72	6 months.	One.	Two.
For a time.	Yes.	June, '78.	24 months.	One (inc. removv'l.)	One.
Yes.	.....	.....	24 months.	None.	One.
Yes.	Yes.	November, '77.	8 months.	Four.	Four.
At first.	Yes.	July, '77.	5 months.	One.	One.
.....	.....	.....	.....	One.	One.
Part'y for a time.	Yes.	October, '76.	2 months.	One.	One.
Yes.	.....	.....	29 months.	None.	One.
.....	.....	.....	9 months.	None.	One.
Yes, for a time.	Yes.	Not stated.	22 months.	One.	One.
Yes.	No.	Not stated.	18 months.	One.	One.
Yes.	Yes.	Not stated.	.....	One.	One.
Yes.	.....	.....	16 months.	None.	One.
.....	.....	.....	2 months.	One.	Two.
.....	.....	.....	4 months.	.....	One.

EXTERNAL SCIRRHOUS

No. of Case.	Extent of operations.	Interval between first removal and death.	Duration of the non-fatal cases.	Period from time from inception of external disease to death or last account.	Date of death.
1	1. Slight. 2. Extensive.	.....	40 months.	40 months.	....
2	Amputation of breast.	.....	17 months.	17 months.	.....
3	Amputation of os uteri, and scraping out uterus.	6 months	.....	11 months.	March, '75.
4	Amputation of breast; excision of lymphatic glands; cut'g axil.v'n.	5 days.	.....	15 months.	June, '78.
5	Amputation of breast.	.....	2 months.	2 months.	.....
6	Amputation of breast; and 2, of new growth.	25 months.	.....	33 months.	Sept., '78.
7	Amputation of breast.	16 months.	.....	65 months.	Sept., '75.
8	Amputation of breast; and 2, cautery.	8 months.	.....	32 months.	June, '77.
9	Extensive excision of the mass.	.....	15 months.	15 months.	.....
10	Amputation of breast.	4 months.	.....	8 months.	Oct., '76.
11	Amputation of breast.	.....	63 months.	63 months.	.....
12	Amputation of breast; 2, of return growth.	16 months.	.....	19 months.	May, '76.
13	Amputation of breast.	36 months.	.....	53 months.	June, '77.
14	....	.....	58 months.	58 months.	.....
15	Amputation of breast, and removal of axillary glands.	.....	26 months.	26 months.	.....
16	Amputation of breast and axillary glands.	.....	32 months.	32 months.	.....
17	Amputation of breast; and 2, removal of enlarged glands.	.....	256 months.	256 months.	.....
18	....	.....	.....	46 months.	Oct., '77.
19	Extensive.	.....	History incomplete.	.....	.....
20	Amputation of breast.	18 months.	.....	24 months.	Jan., '79.
21	Amputation of breast.	.....	13 months.	13 m., hist. incom.	.....
22	Amputation of breast.	3 months.	.....	12 months.	April, '74.
23	Amputation of breast.	22 months.	.....	46 months.	Dec., '75.
24	Partial extirpation of the rectum.	10 days.	.....	24 months.	Sept., '78.
25	Repeated extirpations.	....	69 months.	69 months.	... .
26	Amputation of breast.	20 months.	.....	30 months.	June, '78.
27	Amputation of breast.	.....	85 months.	85 months.	.....
28	Amputation of breast, remo'l of p't of glan's.	.....	34 months.	34 months.	.....
29	Amputation of breast.	.....	36 months.	36 months.	.....
30	Amputation of breast and return growths.	.....	29 months.	29 months.	.....
31	Amputation of breast.	13 months.	.....	18 months.	July, '78.
32	Amputation of breast.	24 months.	.....	.....	June, '78.
33	Excision of the growth.	12 months.	.....	14 months.	Oct., '77.
34	Amputation of breast.	.....	34 months.	34 months.	.....
35	Amputation of breast.	.....	.....	9 months.	.....
36	Amputation of breast.	15 months.	.....	37 months.	August, '77.
37	Amputation of breast.	29 months.	.....	47 months.	Sept, '77.
38	Amputation of breast.	4 months.	.....	....	March, '77.
39	Amputation of breast.	.....	19 months.	....	.....
40	1. Excision of wart; 2, of glands.	34 months.	.....	36 months.	Dec., '75.
41	Excision of superior maxilla; tracheot'my.	None.	.....	4 months.	April, '77.

CARCINOMA.

Cause of death.	Locality of recurrent growth.	Did the patient have any disease independent of cancer accelerating death?	Variety of disease.	Name of Examiner.
.....	.....	.....	1. Fibroma.	Dr. Satterthwaite.
.....	.....	.....	2. Adeno-carc'a.	Drs. Satterthwaite and Porter.
			Scirrhus.	Drs. Satterthwaite and Porter.
Exhaustion.	Bladder, uterus, and rectum.	Syphilis?	Scirrhus.	Dr. Satterthwaite.*
Septicæmia.	.....	No.	Scirrhus.	Drs. Satterthwaite and Porter.
.....	.....	.....	Scirrhus.	No examiner; clinical appearances were those of cancer.
Return of gro'th; exhaustion.	Cicatrix; internally.	No.	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Breast.	Phthisis.	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Cicatrix.	Not stated.	Scirrhus (adeno-carcinoma).	Dr. Satterthwaite.
.....	Same pla'e.	.....	Scirrhus.	Drs. Satterthwaite and Porter.
Exhaustion.	Cicatrix.	Not stated.	Scirrhus.	Dr. Satterthwaite.
.....	.....	.....	Scirrhus.	Drs. Satterthwaite and Porter.
Exhaustion.	Cicatrix.	Not stated.	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Cicatrix.	Not stated.	Scirrhus.	Dr. Satterthwaite.
.....	.....	.....	Scirrhus.	Dr. Satterthwaite.
.....	.....	.....	Scirrhus.	Drs. Satterthwaite and Porter.
.....	.....	.....	Scirrhus.	Dr. Satterthwaite.
.....	.....	.....	Scirrhus.	Drs. Delafield and Satterthwaite.
Asthenia.	.....	No.	Scirrhus.	Dr. Satterthwaite.
.....	.....	.....	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	.....	Pleurisy.	Scirrhus?	Not examined.
.....	.....	.....	Scirrhus.	Drs. Satterthwaite and Porter.
Pneum'a; pleur.	Not stated.	Pneu., pleu.	Scirrhus.	Dr. Satterthwaite.
Phthisis.	.....	Phthisis.	Scirrhus.	Dr. Satterthwaite.
Uræmia.	.....	Chronic dif. nephritis.	Scirrhus.	Drs. Satterthwaite and Porter.
.....	.....	.....	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Cicatrix.	.....	Scirrhus.	Dr. Satterthwaite.
.....	.....	.....	Scirrhus.	Dr. Satterthwaite.
.....	.....	.....	Scirrhus.	Drs. Stimson, Satterthwaite, and Porter.
.....	.....	.....	Scirrhus.	Drs. Satterthwaite and Porter.
.....	.....	.....	Scirrhus.	Drs. Satterthwaite and Peabody.
Exhaustion.	Cicatrix.	No.	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	.....	.....	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Ut's, vag., b'ad'r, rect.	No.	Scirrhus.	Dr. Satterthwaite.
.....	.....	.....	Scirrhus.	Dr. Satterthwaite.
.....	.....	.....	Scirrhus.	Drs. Satterthwaite and Peabody.
Exhaustion.	Cicatrix.	No.	Scirrhus.	Dr. Satterthwaite.
Exhaustion.	Cicatrix.	Phthisis, nephritis, dropsy.	Scirrhus?	Dr. Satterthwaite.
Exhaustion.	Cicatrix.	Cardiac dis.	Scirrhus.	Dr. Satterthwaite.
.....	.....	.....	Scirrhus.	Drs. Satterthwaite and Porter.
Left hæmiplegia.	Ax. glands; none after 2d. removal.	Left hæmiplegia.	Carcinoma simplex.	Dr. Satterthwaite.
Operation.	.....	.....	Scirrhus.	Dr. Satterthwaite.

* The microscopic examination is incomplete; but the clinical history is that of scirrhus.

EPITHELIOMA.

No. of Case.	Initials.	Age.	Sex.	Birthplace.	Condition.	Occupation.	Date when the growth was first noticed.
1	E. C.	70	F.	Ireland.	Widow.	Housewife.	Not stated.
2	J. F.	67	M.	Scotland.	Married.	Shoemaker.	Nov., '75.
3	H. C.	72	M.	Germany.	Widower.	Silver-plater.	Nov., '77.
4	J O'N.	65	M.	Ireland.	Married.	Varnisher.	April, '75
5	A. C.	68	F.	Ireland.	Widow.	Housekeeper.	April, '65.
6	S. G.	61	F.	Ireland.	Single.	Housewife.	March, '64.
7	M. McD.	32	F.	England.	Married.	Housewife.	January, '77.
8	A. N.	39	M.	Not stated.	Not stated.	Merchant.	April, '71.
9	M. D.	42	M.	Ireland.	Single.	Bar-tender.	Sept., '77.
10	Wm. E.	68	M.	Ireland.	Married.	Baker.	June, '71.
11	E. M.	33	M.	Germany.	Married.	Baker.	Dec., '75.
12	J. C.	52	M.	Not stated.	Married.	Contractor.	May, '78.
13	A. D.	40	M.	Canada.	Widower.	Slater.	Dec., '77.
14	M. McC.	60	F.	Ireland.	Not stated.	Not stated.	'65.
15	G. M. C.	61	M.	New York.	Married.	Attorney.	August, '77.
16	J. T.	60	M.	Ireland.	Married.	Laborer.	April, '75.
17	P. M.	61	M.	Ireland.	Married.	Laborer.	[May, '37?] May, '76.
18	A. C.	31	M.	Prussia.	Married.	Jeweler.	April, '75.
19	T. S.	56	M.	Ireland.	Not stated.	Laborer.	July, '77.
20	A. B.	50	M.	England.	Married.	Barber.	Sept., '67.
21	J. McC.	43	M.	Ireland.	Not stated.	Coachman.	Feb'y, '74.
22	W. L. O.	48	M.	Not stated.	Not stated.	Merchant.	October, '73.
23	Wm. C.	46	M.	Ireland.	Married.	Laborer.	July, '75.
24	Mrs. McC.	27	F.	Scotland.	Married.	Housewife.	Nov., '76.
25	N. B.	44	M.	Switzerland.	Married.	Laborer.	March, '74.
26	S. L.	62	M.	New York.	Married.	Book agent.	Dec., '76.
27	J. Y. D.	65	M.	New York.	Married.	Farmer.	October, '76.
28	J. L.	40	M.	United States.	Married.	Laborer.	June, '75.
29	S. B.	67	F.	New York.	Widow.	Nurse.	Nov., '75.
30	A. B.	56	M.	United States.	Widower.	Druggist.	Feb'y, '77.
31	M. G.	41	M.	France.	Single.	Not stated.	Not stated.
32	Mrs. C.	63	F.	United States.	Married.	Housewife.	Not stated.
33	D. B.	60	M.	Ireland.	Single.	Carpenter.	January, '70.
34	E. S. B.	72	F.	Ireland.	Widow.	Housewife.	Not stated.
35	J. H.	65	M.	New York.	Married.	Clerk.	Not stated.
36	B.	52	M.	United States.	Married.	Merchant.	Feb'y, '71.
37	J. G.	63	M.	Canada.	Married.	Cooper.	Jan'y, '78.

EPITHELIOMA.

Locality.	Assigned cause.	Any family history of cancer?	What kind of pain did it produce?	Enlargement of lymphatic glands.	Locality and name of glands involved.
Floor of mouth.	Smoking pipe.	No.	Very little.	No.	.....
Under tongue.	Smoking pipe.	No.	Sharp shooting.	None.	.....
Lower lip.	Smoking pipe.	No.	Acute.	None.	.....
Lower lip.	Smoking pipe.	No.	Not stated.	Not stated.	.....
Upper eyelid.	None.	No.	Acute.	None.	.....
Edge of the hair on forehead, left side.	Scratch from a tooth-comb.	No.	Slight.	None.	.....
Tongue.	Decayed tooth.	Yes.	Severe.	None.	.....
Palate.	Sore mouth.	Yes.	Not stated.	Yes.	Submaxillary.
Rectum.	None.	None given.	Severe.	No.	.....
Lower lip.	Smoking pipe.	No.	None.	Not stated.	.....
Nose.	None.	No.	Very little.	Not stated.	.....
Lower lip.	Chewing a toothpick.	No.	Slight.	None.	.....
Tongue.	Smoking and chewing and syphilis.	No.	Acute.	None.	.....
Lip	None.	Not stated.	Not stated.	Not stated.	.....
Glans penis.	None.	Yes.	Acute.	No.	.....
Lip.	Smoking.	No.	None.	.....	.....
Glans penis.	None.	No.	Acute.	Yes.	Inguinal.
Larynx.	Use of a blow-pipe.	No.	None.	....	.....
Lower lip.	Pipe smoking.	No.	None.	.....	.....
Tongue.	Smoking pipe.	No	Acute.	Yes.	Bronchial
Ear.	Frost-bite.	No.	Moderate.	None.	.....
Cornea.	None.	No.	None.	None.	.....
Nose.	None.	No.	Very little.	Yes.	Submax'y
Middle ear.	None.	No.	Aching, gnawing.	Yes.	.....
Lower lip.	Smoking pipe.	No.	Acute.	Not stated.	.....
Left corner of mouth.	Smoking pipe.	No.	None.	No.	.....
Cheek and jaw.	Smoking pipe.	Yes.	None.	.....	.....
Middle of lower lip.	Smoking pipe.	Yes.	None.	.....	.....
Right labium.	Not stated.	Not stated.	Acute.	Not stated.	.....
Left cheek.	Application of creosote.	No.	Acute.	None.	.....
Neck.	.....	.....	.....	.....	.....
Labia.	Not known.	No.	Acute.	None.	.....
Left side of lower lip.	None.	No, but phthisis.	Itching, severe.	Not stated.	.....
Face.	None.	No.	None	None.	.....
Interior maxilla.	.....	.....	.....	.....	.....
Glans penis.	None.	No.	None.	None.	.....
Œsophagus.	None.	.....	Dull.	None.	.....

EPITHELIOMA.

No. of Case.	When first noticed to be enlarged.	Was any treatment adopted before operation?	Date of operation.	Condition of general health previous to symptoms of cancer.
1	.....	Various applications.	.....	Dyspepsia.
2	.....	No.	Sept., '76.	Good.
3	.....	.....	Nov., '78.	Good.
4	.....	Not stated.	April, '76.	Good.
5	.....	Terchloride of antimony and other caustics.	Four operations, date not known.	Good.
6	.....	Caustics several times.	March, '77, Sept., '77.	Good.
7	.....	No.	June, '78.	Poor.
8	Dec., '73.	Pot. iodid. internally.	No operation, but a small piece cut off.	Poor and had syphilis.
9	.....	Cauterized with silver nitrate.	July, '78.	Good.
10	.....	Caustics.	June, '74.	Hemiplegia.
11	.....	No.	April, '76.	Good.
12	.....	Sugar of lead, glycerine, and terchloride of antimony.	None.	Good.
13	.....	Cautery, leeching, pot. iodid., and arsenic.	March, '78.	Syphilis 20 years.
14	.....	Terchloride of antimony.	No operative interference.	Good.
15	.....	Burned with nitrate of silver.	April, '78.	Opium habit, hæmorrhoids.
16	.....	No.	April, '76.	Good.
17	May, '77.	No.	May, '77.	Good.
18	.....	Partial removal.	Oct., '76, Nov., '76.	Good.
19	.....	No.	Jan'y, '78.	Good.
20	At autopsy.	Cautery and knife.	July, '72.	Good.
21	.....	Quack applications.	Sept., '74.	Vigorous.
22	.....	No.	Oct., '78.	Good.
23	Dec., '78.	Incision over mastoid process.	Jan'y, '76.	Good.
24	.....	Excision of growth.	.....	Good.
25	....	Salves.	June, '75.	Good.
26	....	No.	Dec., '77. Sept., Oct., Dec., '78.	Good.
27	....	Caustics.	April, '77.	Good.
28	....	Not stated.	June, '77, May, '78.	Good.
29	.....	Not stated.	Dec., '76.	Good.
30	.....	Not stated.	Nov., '77, May, '78, Aug,, '78.	Good.
31	.....	....	.....	.....
32	.....	Caustics.	August, '72.	Good.
33	.....	Not stated.	Jan'y, '71, June, '74.	Good.
34	.....	Caustics.	August, '78.	Good.
35	.....	.....	.....	.....
36	.....	No.	Aug., '71, May, '77.	Good.
37	.....	Œsophageal bougies.	None.	Hard drinker

EPITHELIOMA.

Was pain relieved by the operation?	Was the growth more rapid when it recurred?	Date of recurrence.	Interval between period when first noticed and first removal.	Number of recurrences.	Number of operations.
.....	.....	.....	.....	None.	None
Not stated.	Not stated.	Not stated.	10 months.	One.	One.
Yes.	.....	.....	12 months.	None.	One.
Not stated.	.....	.....	12 months.	.....	One.
Partially for a time.	Yes.	Not known.	Not known.	Five.	Four.
Yes.	Yes.	Not stated.	156 months.	Three.	Two.
Yes.	.....	.....	17 months.	None.	One.
.....	.....	.....	.....	.....	None
Yes.	Yes.	Sept., '78.	10 months.	One.	One.
.....	.....	Not known.	36 months.	.....	One.
Yes.	No return.	.....	4 months.	None.	One.
Yes.	.....	Dec., '78.	.....	None.	None
Yes, for a time.	Yes.	May, '78?	3 months.	One.	One.
Yes.	Yes.	.....	.....	.....	....
Yes.	.....	.....	8 months.	None.	One.
Yes.	.....	.....	12 months.	.....	One.
Yes.	Yes.	Very soon.	[480 months.] 12 months.	One.	One.
Yes.	.....	.....	18 months.	One.	Three
Yes.	No return, Nov., '78.	.....	6 months.	None.	One.
No.	Yes.	August, '72.	58 months.	Several.	One.
Not stated.	Yes.	Sept., '74.	7 months.	One.	One.
.....	.....	.....	60 months.	None.	One.
Yes.	Yes.	May, '76.	6 months.	One.	One.
.....	.....	.....	.....	.....	....
No.	Yes.	June, '75.	15 months.	Two.	Two.
.....	No.	Sept., '78.	12 months.	Four.	Four.
Yes.	Yes.	June, '77.	6 months.	One.	One.
Not stated.	Yes.	June, '77.	24 months.	Two.	Two.
Yes.	.....	.....	13 months.	Not stated.	One.
Yes.	Yes.	Dec., '77.	9 months.	Three.	Three
.....	.....	.....	.....	.....	....
Not stated.	Not stated.	.....	.....	Not stated.	One.
.....	Yes.	June, '73.	12 months.	One.	Two.
Nothing to relieve.	.....	Oct., '78.	.....	One.	One.
.....	.....	.....	.....	.....	....
Yes.	No.	Jan'y, '71.	6 months.	One.	Two.
.....	.....	.....	.....	.....	.....

EPITHELIOMA.

No. of Cases.	Extent of operations.	Interval between first removal and death.	Duration of the non-fatal cases.	Period from time of inception of external disease to death or last accounts.	Date of death.
1	.....	.....	.....	.....	.....
2	Excision of the growth.	9 months.	.....	19 months.	June, '77.
3	Removal of growth and chelostomatoplasty.	.....	14 months.	14 months.	.....
4	Removal by V-shaped incision.	.....	.....	....	.....
5	Not known.	.....	.....	154 months.	Feb'y, '78.
6	Not known.	.....	178 months.	178 months.	.....
7	Ligation of lingual artery and removal of growth.	1 month.	.....	18 months.	July, '78.
8	Small piece snipped off.	.....	.....	36 months.	April, '74.
9	Extirpation of the rectum.	6 months.	.....	16 months.	Jan'y, '79.
10	Slight.	.....	36 months.	36 months.	.....
11	Slight.	.....	87 months.	87 months.	.....
12	Local applications.	....	8 months.	8 months.	.....
13	Ligation of both lingual arteries. Removal of half tongue.	3 months.	.....	6 months.	June, '78.
14	Local applications.	.....	168 months.	168 months.	.....
15	Amputation of penis.	.....	17 months.	17 months.	.....
16	Removal of the growth.	.....	12 months.	12 months.	.....
17	Amputation of penis.	6 months.	.....	[486 months.] 18 months.	Nov., '77.
18	Partial removal of larynx.	.....	45 months.	.....	.....
19	Slight elliptical incision	.....	16 months.	16 months.	.....
20	Extirpation.	2 months.	.....	60 months.	Sept., '72.
21	Slight.	.....	59 months.	59 months.	.....
22	Slight.	.....	63 months.	63 months.	....
23	Slight.	.....	42 months.	42 months.	.....
24	.....	....	....	8 months.	July, '77.
25	Extension.	4 months.	.....	19 months.	October, '75.
26	No extension.	.....	25 months.	25 months.	.. ..
27	Extension.	6 months.	.....	12 months.	October, '77.
28	1. Slight. 2. Extension.	.....	43 months.	43 months.	.....
29	Removal of both labia.	8 months.	..... .	21 months.	August, '77.
30	Moderate.	.....	19 months.	19 months.	.....
31	....	.....	....	.....	Jan'y, '76.
32	Removal of labia.	5 months.	.....	5 months.	Jan'y, '13.
33	Both slight.	.....	108 months.	108 months.	.....
34	Slight.	.....	.....	... .	.....
35	....	.....	.....	.....	August, '78.
36	Amputation of penis.	.....	95 months.	95 months.	.....
37	....	.....	.....	6 months.	July, '78.

EPITHELIOMA.

Cause of death.	Locality of recurrent growth.	Did the patient have any disease independent of carcinoma accelerating death?	Variety of disease.	Name of examiner.
.....	.....	.....	Epithelioma.	Not examined.*
Exhaustion.	Same place.	Not stated.	Epithelioma.	.....
.....	.....	.....	Epithelioma.	Drs. Satterthwaite and Porter.
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	Same place.	Not stated.	Epithelioma.	.....
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	.....	Phthisis.	Epithelioma.	Drs. Satterthwaite and Shrady.
Exhaustion.	.....	Syphilis.	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	Same spot.	No.	Epithelioma.	Drs. Satterthwaite and Stimson.
.....	.....	.....	Epithelioma.	.....
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	Lungs.	.....	Epithelioma.	Drs. Satterthwaite and Stimson.
.....	.....	.....	Epithelioma.	.....
.....	.....	.....	Epithelioma.	Drs. Satterthwaite and Porter.
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
Exhaustion and hæmorrhage.	Inguinal glands.	No.	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
Abscess of lung.	Same place.	No.	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Melanotic epithelioma.	Drs. Bull and Satterthwaite.
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	.....	Pachymeningitis.	Epithelioma.	Drs. Shaw and Satterthwaite.
Exhaustion.	Same spot.	No.	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Epithelioma.	Drs. Satterthwaite and Porter.
Exhaustion.	Same spot.	No.	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Epithelioma.	Drs. Satterthwaite and Peabody.
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Epithelioma.	Drs. Satterthwaite and Peabody.
Consumption.	Same place.	Phthisis.	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	.....	.....	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Epithelial wart.	Dr. Satterthwaite.
Exhaustion.	Same spot.	No.	Epithelioma.	Dr. Satterthwaite.
.....	.....	.....	Epithelioma.	Dr. Satterthwaite.
Exhaustion.	.....	Gangrene of the lung.	Epithelioma.	Drs. Satterthwaite and Porter.

* The clinical history was that of epithelioma.

INTERNAL SCIRRHOUS CARCINOMA.

No. of Case.	Initials.	Age.	Sex.	Birthplace.	Condition.	Occupation.	Date when the growth was first noticed.	Locality.	Assigned cause.	Family history of cancer or not.	Kind of pain.	Name and locality of enlarged lymphatic glands.	When first noticed to be enlarged.
1	J. B.	54	M.	Ireland.	Married.	Coachman.	May, '72.	Stomach.	None.	None.	Slight.	None.	.....
2	J. G.	57	M.	England.	Not stated.	Clerk.	Aug., '77.	Stomach, liver.	None.	None.	Acute.	None.	.....
3	W. W.	26	M.	Ireland.	Married.	Laborer.	Feb., '78.	Stomach, liver.	Strain.	None.	Slight.	Mesenteric.	Autopsy.
4	W. B. C.	64	M.	England.	Married.	Nurse.	May, '77.	Stomach.	None.	None.	Severe.	None.	.....
5	A. G. C.	50	F.	Norway.	Widow.	Laundress.	April, '73.	Colon.	None.	None.	Intense.	Mesenteric.	Autopsy.
6	H. S.	58	M.	U. States.	Single.	Farmer.	Autopsy.	Stomach.	None.	None.	None.	None.	.....
7	W. A.	41	M.	Germany.	Widower.	Baker.	Jan., '76.	Stomach.	None.	None.	Sharp.	None.	.....
8	A. D.	49	F.	Virginia.	Married.	Housewife.	March, '76.	Ileocæcal valve	None.	None.	Severe.	Mesenteric.	Autopsy.
9	C. M.	44	M.	Germany.	Not stated.	Butcher.	Oct., '77.	Stomach.	None.	None.	Cramps.	None.	.....
10	J. L. B.	70	M.	U. States.	Married.	Not stated.	Feb., '73.	Duodenum.	None.	None.	Severe.	None.	.....
11	K. G.	55	F.	Sweden.	Widow.	Milliner.	July, '75.	Stomach.	None.	None.	Severe.	None.	.....
12	W. S.	53	M.	U. States.	Widower.	Laborer.	July, '74.	Œsophagus.	None.	None.	None.	None.	.....
13	J. C. F.	52	M.	New York.	Married.	Stonecutter.	Dec., '74.	Bladder.	None.	None.	Intense.	Retro-periton'l	Autopsy.
							MEDULLARY CARCINOMA.						
1	A. M. R.	55	F.	Not stated.	Widow.	Nurse.	Dec., '73.	Left breast.	None.	None.	Severe.	None.	....
2	S. W.	83	M.	New York.	Single.	Retir'd merch't	Autopsy.	Kidney.	Renal calc'li	None.	None.	None.	.....
3	M. J. T.	47	F.	Bermuda.	Single.	Not stated.	May, '69.	Left breast.	None.	None.	Severe.	Not stated.	.....
4	L. S. M.	25	F.	U. States.	Married.	Not stated.	Dec., '74.	Vagina.	Abortion.	None.	Burning.	Not stated.	.....
							COLLOID CARCINOMA.						
1	A. S.	41	F.	Not stated.	Married.	Not stated.	Dec., '72.	Rt. breast.	Not stated.	None.	None.	None.	.....
2	J. H.	50	M.	Ireland.	Married.	Porter.	May, '65.	Rectum.	Op'ation for fist'la in ano.	Yes.	Slight.	None.	.....
							CAULIFLOWER GROWTH.						
1	J. W.	33	F.	U. States.	Married.	School-teacher.	Nov., '73.	Os uteri.	None.	None.	Sharp.	None.	.....
2	C. E. H.	48	F.	U. States.	Single.	School-teacher.	July, '72.	Os uteri.	None.	None.	Acute.	None.	.....
							UNCLASSIFIED CARCINOMA.						
1	J. B.	51	M.	England.	Not stated.	Miner.	Nov., '75.	Rectum.	Hæm'rhoid.	No; but of phthisis.	None.	Not stated.	....

INTERNAL SCIRRHOUS CARCINOMA.

No. of Case.	Date of operation.	Condition of general health previous to symptoms of cancer.	Was pain relieved by the operation?	Was the growth more rapid when it recurred?	Date of recurrence.	Interval between period when first noticed and first removal.	Number of recurrences.	Number of operations.	Extent of operation.	Interval between first removal and death (months).
1	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
7	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
8	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
9	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
12	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
13	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....

MEDULLARY CARCINOMA.

1	Mar., '74.	Good.	Yes.	Has not returned.	.....	3 mos.	None.	One.	Amputation of the breast.	.....
2	.....	Good.	.....	.....	.....	.....	.....	.....	.....	.....
3	Jan., '74.	Good.	Not stated.	Not stated	.....	56 mos.	None.	One.	Amputation of the breast.	.....
4	No op.	Good up to Feb., '74.	.....	.....	.....	.....	.....	.....	.....	.....

COLLOID CARCINOMA.

1	Mar., '73.	Good.	None to relieve.	.....	.....	3 mos.	None.	One.	Amputation of the breast.	.....
2	May, '78.	Poor.	Not stated.	.....	.....	156 mos.	None.	One.	Extirpat'n of the rectum.	4 days.

CAULIFLOWER GROWTH.

1	April, '74.	Good.	Yes, partially.	Yes.	May,'74.	5 mos.	One.	One.	Removal of a small piece.	23
2	Mar., April, Sept., '76.	Good.	Partially.	Yes.	Not stated.	46 mos.	Three.	Three.	Excisions of small portions.	20

UNCLASSIFIED CARCINOMA.

1	May, '76.	Not very g'd.	Not stated.	Yes.	Not stated.	6 mos.	One.	Two.	Extirpation of the rectum.	4

INTERNAL SCIRRHOUS CARCINOMA.

No. of Case.	Duration of the non-fatal cases (months).	Period of time from inception of disease to death or last acc'ts (months).	Date of death.	Cause of death.	Did the patient have any disease independent of carcinoma accelerating death?	Name of examiner.
1	.....	6	Nov., '72.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
2	.....	1	Sept., '77.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
3	.....	6	Aug., '78.	Exhaustion.	.....	Drs. T. E. Satterthwaite and W. H. Porter.
4	.....	11	April, '78.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
5	.....	3	July, '73.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
6	.....	None.	Oct., '77.	Exhaustion.	Gangrene of hand and chronic dif. nephritis.	Drs. T. E. Satterthwaite and W. H. Porter.
7	.....	5	June, '76.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
8	.....	18	Sept., '77.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
9	.....	1	Nov., '77.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
10	.....	3	June, '73.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
11	.....	22	May, '77.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
12	.....	3	Oct., '74.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
13	.....	12	Dec., '75.	Exhaustion.	.....	Dr. T. E. Satterthwaite.
				MEDULLARY CARCINOMA.		
1	61	61	.....	.....	.....	Dr. Satterthwaite.
2	.....	.....	Mar., '78.	.....	.....	Dr. Satterthwaite.
3	56	56	.....	.....	.....	Dr. Satterthwaite.
4	.....	20	Oct., '75.	.....	.....	Dr. Satterthwaite.
				COLLOID CARCINOMA.		
1	73	73	.....	.....	.....	Dr. Satterthwaite.
2	.....	156	June, '78.	Exhaustion.	Pyæmia and chronic nephritis.	Drs. Satterthwaite and Peabody.
				CAULIFLOWER GROWTH.		
1	.....	28	Mar., '76.	Exhaustion.	.....	Dr. Satterthwaite.
2	.....	64	Nov., '77.	Exhaustion.	.....	Dr. Satterthwaite.
				UNCLASSIFIED CARCINOMA.		
1	.....	10	Sept., '76.	Exhaustion.	.....	Dr. Satterthwaite.

Statistics of Scirrhous Carcinoma.

1. *Age.*—It has been found that, in the largest number of cases which were accessible to the knife, the disease commenced between the ages of 42 and 46. The earliest age at which it made its appearance was 28 years, and the most advanced 76, after which period there seems to have been immunity. In the class affecting internal organs not accessible to the knife, it will be seen that the largest number of cases occurred between the years of 50 and 58, extending over the period from 26 to 70, with 51.77 as the average age of commencement.

Mr. Paget does not make the distinction between external and internal growths here laid down, but he states ("Surgical Pathology," p. 636) that the greatest tendency to scirrhous carcinoma (breast) occurs between 45 and 50. He, however, does not give the exact ages of his youngest and oldest cases.

The youngest recorded age at which scirrhus appears to have been noticed is given by Dr. S. W. Gross ("North American Medico-Chirurgical Review," May, 1857). He there relates the case of a mulatto child, three months old, who had a small deposit in the liver.

Winiwarter* says, in speaking of scirrhus, that the skin shows the earliest development, then the breast, and lastly the mucous membranes. The period of greatest frequency in breast carcinomas is reached between 41 and 45; after 85 they do not appear. Mucous membrane carcinomas begin between the ages of 25 and 30, reach their greatest height between 56 and 60, and do not occur after 85. He does not give the exact ages of his youngest and oldest cases.

Mr. Sibley deduced from the Middlesex Hospital Records† that, on average, epithelial cancer destroys life in fifty-three (53) months, while scirrhus lasts only 32·25 months.

2. *Sex.*—Of the external cases of scirrhus, in 36 or 87·80 per cent. the disease occurred in females; in 12·20 per cent. in males; showing that the form which is accessible to the knife is most frequently found in females, and this is owing to the

* "Statistik der Carcinome," etc.

† "Medico-Chirurgical Transactions," vol. xliii., p. 125.

frequency with which the disease locates itself in the female breast. On the other hand, the contrary holds good with those growths which we have here classed as internal, 10 or 76·92 per cent. being in males, and 23·08 per cent. in females. Of the 33 breast cases, 32 or 96·97 per cent. occurred in females; 1 or 3·03 per cent. in males. These statistics agree remarkably with those of Mr. Paget ("Surgical Pathology," p. 634), who says: "Probably in every 100 cases of scirrhous cancer of the breast, 98 occur in women, and I believe it is chiefly this that makes cancer, on the whole, more frequent in women than in men, for in nearly every other organ common to both sexes the greatest frequency is found in men."

3. *Conditions.*—Of the 41 cases above mentioned 31 or 75·61 per cent. were or had been married, while 7 or 17·07 per cent. were single. In 3 or 7·32 per cent. no information was obtained upon the point. Of the 13 internal cases 10 or 76·92 per cent. were or had been married, 1 or 7·69 per cent. was single, and of 2 or 15 38 per cent. nothing was known on this point. Of course, in the absence of trustworthy statistics as to the relative numbers of married and unmarried persons in the community, figures have no meaning. The same statement would apply if we were to take the breast cases in women and attempted to determine whether married life tended to develop them. But even if we had the figures for one locality, they would not apply, because the cases came from widely different points in this and adjoining States. Such statistics, therefore, are valueless.

4. *Locality.*—Of the 41 cases above mentioned, in 15 or 36·59 per cent. the disease first appeared in the right breast, while in 11 or 26·83 per cent. it was in the left; in 5 or 12·19 per cent. it occurred in one of the two breasts, the particular one not stated; in 2 or 4·88 per cent. in the nipple. Thus, of all the scirrhous cases 33 or 80·4 per cent. occurred in the mammary gland or its immediate vicinity; in 2 or 4·8+ per cent., it originated in the uterus; while in the remaining 6 or 14·63+ per cent. it took its origin at various parts of the body, as about Steno's duct, the nose, neck, rectum, back, and superior maxilla (1 case each). Of the 13 internal cases 6 or 46·15 per cent. originated in the stomach; 2 or

15·38 per cent. in the liver and stomach; in the other 5 or 38·41 per cent. in various internal organs, as the œsophagus, duodenum, ileocæcal valve, colon, and bladder (1 case each).

The order of frequency in locality was therefore found to be as follows in the 54 cases.

Breast, including nipple	33
Stomach	6
Liver and stomach	2
Uterus	2
Cheek	1
Nose	1
Neck	1
Superior maxilla	1
Œsophagus	1
Back	1
Duodenum	1
Ileocæcal valve	1
Colon	1
Rectum	1
Bladder	1
	54

5. *Assigned Cause, especially in reference to Traumatism.*—Of the 41, in 17 or 41·46 per cent. there was no assigned cause, that is, no reason was given on inquiry; while in 15 or 36·59 per cent. one was definitely given. In 13 or 31·70 per cent. such traumatisms were mentioned as a decided blow, a mammary abscess, ulceration of the nipple, and decayed teeth. In 8 or 19·51 per cent. no answers were given to inquiries on this point. In one case the matter was uncertain (2·44 per cent.). In only 1 of the 13 internal cases was there any cause given whatever. This was a strain in a case of cancer of stomach and liver. Of the 33 cases of scirrhous carcinoma of the breast, in 13 or 39·39 per cent. there was an assigned cause of traumatic nature, such as a blow, mammary abscess, or ulcerated nipple, a proportion considerably in excess of Mr. Paget's figures, which show an ascribed injury in 17·5 per cent.

6. *Family History.*—Of the 41 external cases, in 26 or 63·41 per cent. there was no family history of carcinoma; in 6 or 14·63 per cent. this relation was distinctly shown; in 2

or 4·88 per cent. there was a family history both of carcinoma and phthisis; in 2 or 4·88 per cent. no statement was obtained in reference to previous history; in 1 or 2·44 per cent. there was a family history of phthisis alone; in 1 or 2·44 per cent. there was a history both of phthisis and syphilis; in 1 or 2·44 per cent. the history of carcinoma was uncertain, as a relative died of a uterine tumor; in 1 or 2·44 per cent. it was quite probable that there was a family history of carcinoma. Including, therefore, all the possible cases, we have 29·27 per cent. with a family history of carcinoma, against 70·73 per cent. with no family history of carcinoma. In reference to the internal growths, all were free from family taint. Adding, therefore, all forms of scirrhus together, in 54 cases there were 10 (18·52 per cent.) in which a family tendency was probable.

Mr. Paget says "in 88 patients, including four cases from other organs than the breast, that in 16 or 18·18 per cent. there was a family history of carcinoma, but the proportion is larger if calculated from a large number of private patients."

7. *Pain.*—Of the 41 cases accessible to operative interference, in 29 or 70·73 per cent. there was a decided history of pain (severe in character); in 7 or 17·07 per cent. the pain was moderate in severity; in 3 or 7·32 per cent. there was no pain; in 2 or 4·88 per cent. no statement was made on the point. Of the 13 internal cases, in 9 or 69·23 per cent. there was decided pain; in 2 or 15·38 per cent. it was very slight; and in 2 or 15·38 per cent. there was no pain. In the 33 cases originating in the breast, pain was a decided symptom in 28 or 84·85 per cent.

8. *Enlargement of the Lymphatic Glands.*—Of the 41 cases, in 22 or 53·66 per cent. the lymphatic glands were noticed to be enlarged; in 19 or 48·79 per cent. no information was gained on this point. Of the 13 internal cases in only 4 or 30·77 per cent. was it positively stated at the necropsy that the lymphatic glands were enlarged; in the other 9 or 69·23 per cent. there was either no enlargement of the surrounding glands, or else no note was made of the fact.

9. *Treatment prior to any Operation.*—Of the 41 cases,

in 12 or 29·27 per cent. there was no treatment adopted prior to operation; in 12 or 29·27 per cent. there was treatment; in 17 or 41·46 per cent. no information could be gained on this point. Of the 33 cases involving the breast, in 9 or 27·27 per cent. there had been local or constitutional treatment prior to the operation, and the results seemed to have been on the whole a failure, so that the patients willingly submitted to an operation. The treatment consisted of local anodynes, rubbing and applications of a quack ointment, internal use of arsenic, application of leeches, electrolysis, pastes (arsenical, and others the ingredients of which were unknown), incisions, and poultices.

10. *General Health previous to Inception of Carcinoma.*—Of the 41 cases, in 30 or 73·17 per cent. the general health had always been good; in 3 or 7·32 per cent. there had been syphilis; in 3 or 7·32 per cent. no information was obtained on this point; in 3 or 7·32 per cent. the previous health had been poor, the particular difficulty being headache and chronic diffuse nephritis (one case each); in 1 or 2·44 per cent. it was fair, in 1 or 2·44 per cent. the patient had suffered from general debility for 8 years. Of the 13 cases, in all, or 100 per cent., the general health had been good. Of the 33 cases involving the breast, in 27 or 81·82 per cent. the health had been good in all but one case; and from the fact that a cachexia was only shown in three, it may be inferred that scirrhous carcinoma is a disease of established health rather than the contrary, facts which support the theory of some writers that cancer is an affection of "robust" health.

11. *Effect of Operation on Pain.*—Of the 41 cases, in 26 or 63·41 per cent. there was decided relief from pain following the operation, although in a few of them the interval of freedom was short; in 6 or 14·63 per cent. pain was partially relieved; in 8 or 19·51 per cent. the history was incomplete; in 1 or 2·44 per cent. pain was not relieved. Of the 33 breast cases, the pain was relieved in 24 or 72·73 per cent.

These are important points in connection with others which will be shown subsequently, when the question is discussed whether the operation tends to increase the expectation of life. Even if we should not find that life is prolonged, as

operations are now carried out under the influence of anæsthetics and with the diminished immediate danger to life which modern surgery has assured, we may in very many cases promise the patient that the operation will be painless and that the wound will be healed within a week or ten days. During this time and until the subsequent eruption of the disease, there will be almost certainly an absence of pain. Patients thus are relieved from the manifestations of a loathsome disease, that makes them offensive to themselves and to others, and they are granted an immunity from pain for months and even years, during which time they may travel, visit their friends, and have time to calmly prepare for the almost inevitable—a fatal issue.

12. *Rate of Growth after Removal.*—Of the 41 cases, in 17 or 41·46 per cent. the progress was more rapid; in 19 or 46·34 per cent. no information could be gained, as the histories were incomplete; in 3 or 7·32 per cent. it was not as rapid; in 1 or 2·44 per cent. it was difficult to tell; in 1 or 2·44 per cent., although it was positively stated that the disease returned, no mention was made of the rapidity.

Mr. Paget ("Surgical Pathology," page 652) thinks "the recurrent local disease appears generally to be less intense than the primary." Owing to the absence of any information in about half the cases, no conclusions can be reached. Probably statements from patients on this head would not be of much value.

13. *Average Period (in months) between First Appearance and Operation.*—As there was no cutting operation in one case, and the dates were not given in two, there remained only 38 complete records; the average interval was 17·03 months, excluding the case with longest interval, which was 214 months. The shortest interval from inception to operation was three weeks (figured as one month). The average gives us a fair opportunity of looking into the questions of the advantage or disadvantage of early operation on the life expectation. The solution of it will be taken up later.

14. *Dangers of the Operation.*—Of the 41 cases, in 40 extirpation by the knife was performed, and the mortality directly attributable to operation was only 5 per cent. In

two cases, one died of hæmorrhage, and the other on the table.

15. *Average Interval between First Removal and Death.*—Including these two cases with another (case No. XXIV.) that died of uræmia, we have 18 fatal cases that lived in the aggregate 305 months, or an average of 16·95 per cent. months. In 31 cases tabulated by Mr. Paget ("Surgical Pathology," page 654), it was 22·74, or $22\frac{3}{4}$ months. These cases should really be excluded because the cause of death in the two was accidental, and in the third from an independent disease. With this modification the interval would be 20·33 months—not quite as good a showing as Mr. Paget has.

16. *Average Duration of the Non-fatal Cases.*—Of the remainder, 16 were living January 1, 1879, and had lived a period of 572 months, or an average of 35·75 months. As the cases were concluded in many instances shortly after the operation, this percentage will in reality be much larger. Now, adding these two aggregate sums together, viz., the sum of months lived by the fatal, to those lived by the non-fatal, we have $305 + 572 = 877$ months lived by all cases, excluding two incomplete cases, one of electrolysis, three that died shortly after the operation, and one of unnatural length—an average, therefore, of life $877 \div 34 = 25{\cdot}79$ *under operation*. These are the least possible figures under our table, but they will of course be very much increased as time goes on, and would now be increased by the addition of the excluded cases, especially one of Dr. Weir's, very remarkably prolonged. Paget gives the duration of cases where there has been operative interference as 48–55 months.

As we have no means of comparing the results of operative interference with non-interference, the question of the advantage of the former can not be settled. Mr. Paget's figures are of course built upon the clinical, not microscopic, evidence of scirrhus, and we can not compare them with ours.

It is interesting to observe, first, that the person who has lived longest (256 months), and is still in pretty good health, has been operated on four times; then in the next longest case, also living (85 months), the operation has been done

twice; in the next, also living (69 months), there have been four operations, commencing in 1877 (Dr. Sabine's case); that in the next longest case (65 months) there was one operation. The case of electrolysis lived in all 46 months. The knife appears, therefore, to have enjoyed the preference; but, as before said, we have no means of comparing the results of interference with non-interference, because we have no statistics, and never shall have any until we have been able to collect them from *post-mortem* records, showing the ages to which such persons live when left alone. We shall probably have to wait some time for these records. It may be said of the knife that it is preferred by patients because it operates rapidly and painlessly, there is rapid convalescence, and the mortality is minimal. *The fact remains positive that where the greatest number of operations have been performed we have found the greatest duration of life.*

17. *Does Early Operation give a Longer Respite of Life than Late Operation?* -In order to solve this question we arranged all the fatal cases of interference by the knife in groups, viz.: 1. Those in which the operation was done within the first six months after the inception of the disease: 2. Those in which it was done within the second six months; 3. Those in which it was done within the third six months.

These cases were found, however, to present such a small percentage of those operated on that no trustworthy conclusions could be deduced from them.

18. *Average Duration of the Symptoms of Internal Scirrhus.*—The average duration of the symptoms of the 13 cases of internal growths of scirrhus were only about 7 months (16.23 per cent.), and in one case there were no symptoms at all.

19. *Are the Clinical Symptoms sufficient to make a Positive Diagnosis before Removal?*—In the majority of cases, the surgeon makes no mistake, because he usually has to deal with scirrhus of the breast; in the diagnosis of internal cancer, the variety is rarely detected, and indeed the disease itself is not suspected unless it interferes with some of the important functions of life.

20. *Has the Microscopic Study of the Disease enabled us to determine better its Real Nature from the Clinical Symptoms?*—In only a single instance is it known that an error has been committed in assigning a growth to its particular class in the form now under consideration. In this the specimen had become so changed by decomposition (in warm weather) that its character was mistaken, and the diagnosis of fibroma given. The error was subsequently discovered and corrected.

21. *Has the Recurring Tumor the same Type as the Primary?*—In reference to scirrhus, it may be said that it never undergoes any change if it returns at the same site. Scirrhus of the breast is, however, apt to be medullary, when it invades such organs as the lungs, liver, or kidney.

22. *When the Operation was Extensive, was the Disease more retarded than when less Tissue was removed?*—In reference to this point it is difficult to obtain any satisfactory information. Presumably most cases were extensive, because surgeons of the present day are impressed with the fact that much success depends upon the thoroughness with which they remove the growth.

23. *Does Carcinoma ever occur Primarily in the Glands?*—In one instance only did the disease occur primarily in the glands (axillary). The possibility of this occurrence, so rare as to have been denied by excellent observers, seems to be reasonably well shown in this case.

24. *Relation of the Disease to Phthisis and Syphilis.*—In the 54 cases of scirrhus, including those in both tables, in only 5 (Nos. IV., XI., XIII., XIX., XXIV.), or 9.26 per cent., has any family history of phthisis been obtained, and in no case is phthisis mentioned as having preceded the outbreak of the disease. In 5 cases (Nos. VII., XX., XXII., XXIII., and XXXVII.) there was some complication of the respiratory organs that hastened death, but in only 3 was it stated with positiveness, and even in them there was room for doubt, because a *post-mortem* examination appears to have been made in only 2 cases. Adding, however, these 3 cases to the 5 in which there was a family history of phthisis, and all of which are distinct cases, it would appear that in only 8 out of 54

cases (14·81 per cent.) was there any phthisis connected in any way with the person or his family.

Statistics of Epithelioma.

Of the 37 cases of epithelial carcinoma, all but one occurred when they were within reach of operative interference.

1. *Age.*—The largest number of these cases of epithelial carcinoma were observed first between the ages of 58 and 66, the average age at which it occurred being 54·11 months, with a range from 27 to 72 years. Mr. Paget says that the favoring period regularly increases with the advance of age, until 70 is reached. Winiwarter says, "Carcinomas of the skin begin the earliest. The greatest frequency of the skin carcinoma is reached between 46 and 50. There is no cancer after 85."

2. *Sex.*—Of the 37 cases, 28 or 75·68 per cent. occurred in males, 9 or 24·32 per cent. in females; it will be observed that these figures are the reverse of those presented in the scirrhous variety. Mr. Paget, speaking of epithelioma, says: "In 105 cases affecting parts common to both sexes, 86 were in men (81·90 per cent.), and 19 (18·09 per cent.) in women.

3. *Condition.*—Of the 37 cases, 28 or 75·68 per cent. were married or had been, while 4 or 10·81 per cent. were single; in the balance, 5 or 13·51 per cent., the histories were incomplete on this point. The influence of marriage can not be determined in epithelioma any more than in scirrhus, for similar reasons. Winiwarter's also concludes that its influence is not certain.

4. *Locality.*—Of the 37 cases, in 11 or 29·73 per cent. the growth was located on the lip, either on the upper or lower alone, or both, or at the angle of the mouth; in 4 or 10·81 per cent. the growth was located on the tongue (above or below); in 3 or 8·11 per cent. on the glans penis; in 8 or 21·62 per cent. on the nose, cheek, ear (external and internal, 1 each), and labia (2 cases each); in 11 or 29·73 per cent. the disease was located in the floor of the mouth, eyelid, edge of the hair, palate, rectum, larynx, neck, face, inferior maxilla, œsophagus, and cornea (1 case each). Of Winiwarter's 548 cases, 39·41 per cent. were located in the skin.

5. *Assigned Cause, Traumatic or Constitutional.*—Of the 37 cases, in 12 or 32·43 per cent. it was ascribed to smoking

a pipe, for in all the cases but one, the patient had been in the habit of resting the pipe stem at the point where the disease first made its appearance. In 8 or 21·62 per cent. various traumatic causes were ascribed, such as chewing a tooth-pick, etc., so that in 20 or 54·05 a previous traumatism was assigned. In 13 or 35·14 per cent. no cause whatever was given to it, while in 4 or 10·81 per cent. the history did not state anything in regard to this point. Mr. Paget, in his 34 cases of epithelial cancer, states that in 19 or 55·88 per cent. there had been an injury or previous morbid condition in the affected part. Winiwarter gives as causes: 1. Slight frostings of the face as in people exposed in the country. 2. Slight and frequent injuries, such as cuts and scratches in shaving; excoriations of the lip by a pipe stem; and burning by nicotine, nitrate of silver, etc. 3. From lacerated or incised wounds; injuries to a cicatrix. 4. From a blow of which no apparent trace was left. Permanent pressure, such as precedes bed sores or callus. 6. Some pathological process such erysipelas, frost-bite, opaline plaques. 7. Hypertrophy of papillary growths, warts, etc., or from cysts or burns. 8. From acute inflammation leaving a chronic infiltration. 9. From ulcerations of the skin.

6. *Family History.*—Of the 37 cases, in 26 or 70·27 per cent. there was no family history of carcinoma; in 5 or 13·51 per cent. there was a distinct family history of cancer; in 6 or 16·22 per cent. the facts were deficient; in 1 or 2·70 per cent. there was no history of carcinoma but one of phthisis. In only 5 per cent. of Mr. Paget's epithelial carcinomas was there a possible family history of carcinoma. Of these cases (16) 3 only were epithelial (p. 735).

7. *Pain.*—Of the 37 cases, in 15 or 40·54 per cent. there was very severe pain; in 7 or 18·92 per cent. there was a moderate amount or slight pain; in 10 or 27·03 per cent. there was absolutely no pain; in 5 or 13·51 per cent., no information could be obtained on this point. Pain seems to be a very prominent symptom in this class of growth; and when it attacks the tongue the suffering is more intense than in the other localities. Mr. Richard Barwell ("Lancet," April 19, 1879) suggests, for the relief of this pain, division of the

gustatory nerve, which he has done when the whole organ was involved, though he has never done it when a portion only of the tongue was involved.

8. *Enlargement of Lymphatic Glands.*—Of the 37 cases, in 18 or 48·65 per cent. there was no affection of the lymphatic glands; in 5 or 13·51 per cent. the lymphatic glands were found to be enlarged; in 14 or 37·84 per cent. no information could be gained on this point. Mr. Paget says that out of 42 cases in the ordinary course of hospital and private practice, including many in the early as well as in the latest stages of the disease, he observed the lymphatic glands enlarge 20 times or in 47·62 per cent. These figures have no great value, because it is well known that sooner or later the neoplasm will invade the lymphatic glands in the vicinity. Should none exist in the vicinity, the disease may progress to great length or even to a fatal issue with no involvement of glands.

9. *Treatment prior to Operation.*—Of the 37 cases, in many there had been local treatment before operation, the applications generally made being a saturated solution of the terchloride of antimony, which, in almost all cases, produced temporarily relief, and in fact seemed to cause the disease to disappear. Some had taken arsenic internally.

10. *General Health previous to Carcinoma.*—Of the 37 cases, in 28 or 75·68 per cent. the previous health of the patient prior to the inception of the disease had always been good; in 2 or 5·41 per cent. it was not known; in 1 or 2·70 per cent. it had always been poor; in 1 or 2·70 per cent. the patient had suffered from dyspepsia for a number of years; in 1 or 2·70 per cent. the patient was suffering from hemiplegia; in 1 or 2·70 per cent. he had the habit of eating opium, and also had hæmorrhoids and stricture of the urethra; 1 or 2·70 per cent. was addicted to the excessive use of alcohol; in 2 or 5·40 per cent. there had been syphilis. Mr. Paget says: "The general health of patients with epithelial cancer is usually good, till it is affected by the consequences of the local disease" (p. 741).

11. *Effect of Operation on Pain.*—In 29 of the 37 cases in which a cutting operation was resorted to, in 16 or 57·77 per cent. the pain was relieved by the operation; in 2 or 6·90

per cent. the pain was partially relieved; in 2 or 6·90 per cent. the pain was not relieved; in 1 or 3·45 per cent. there was no pain to be relieved; in 8 or 27·59 per cent. no information could be gained regarding relief from pain; and, in two of the cases in which no cutting operation was resorted to, relief from pain was brought about by the application of the terchloride of antimony. It would appear from the above figures that the operation should be resorted to for the relief of pain; and in this class of growth some relief seems to have here gained by the use of a local caustic, which is the reverse of the results in scirrhous carcinoma.

12. *Rate of Growth after Removal.*—Of the 29 cases in which the cutting operation was resorted to, in 13 or 44.83 per cent. the recurring neoplasm grew more rapidly than the primary; in 2 or 6·90 per cent. there has up to date been no return of the growth; in 14 or 48·27 per cent. no information could be gained as to the return of the growth. Mr. Paget speaks of some cases extending over a large number of years, but these cases are rare. The rate of progress after removal is different in different parts of the body. In the tongue it is most malignant; in the scrotum and extremities least so.

13. *Average Period in Months between First Appearance and Operation.*—Of the 37 cases, in 26 cases the average interval between inception and operation was 20·92 months; the shortest interval being 3 months, the longest 156 months. In one case (XVII.) the patient stated that he had the disease 40 years. In this case the disease was probably a benign wart for a number of years.

14. *Average Interval between First Removal and Death.*—Of the 10 fatal cases in the table, the average interval between removal and death was 5 months; the shortest interval being 1, and the longest 9 months. This paragraph must be studied in connection with Nos. 15 and 16.

15. *Average Duration of the Non-fatal Cases.*—In the 18 non-fatal cases, the average duration was over 54 months; the shortest interval being 8 and the longest 178 months, which as yet do not come up to some extraordinary cases cited. The case of over 40 years' standing is excluded from the calculation, but may be found in the tables. When the full history of

each case is concluded, there is still a possibility that the duration of the disease may have equaled in some instances the remarkable ones now on record.

16. *Average Duration of Fatal Cases.*—In the 15 fatal cases the average duration in 13 was 29·23 months; the shortest being 5 and the longest 154 months, and this is much below Mr. Paget's conclusions. "The average duration among 14 patients, in whom it commenced below 45 years of age, was 39 months; that among 17 in whom it commenced later was 45½ months." In the 7 fatal cases in our table which occurred before 45 years of age, the average duration of life was only 14⅝ months; while in the cases after 45 it was 39 months.

17. *Average Duration of Fatal and Non-fatal Cases to Date, January, 1879.*—The average duration of the fatal cases and of the non-fatal to date (January, 1879) is, of the 31 cases of which we have complete records, 44.03 months. While the average duration is comparatively less for all the cases together, if we separate those below 45 from those above it, it will be found that in the former the average was only 28·70, while above 45 it was 51·33 months. This average will of course constantly improve until all the cases are dead.

18. *Does the History of the Fatal Cases operated on show that they live on an average longer than Similar Cases not operated on?*—This is impossible to decide from our statistics; for, in all of the 37 cases but 7, an extensive cutting operation was done. Of these latter four had imperfect histories. In 1 a partial operation was done, and in the remaining 2 none was attempted.

19. *Has any Relation been shown between Sarcoma and Carcinoma in these Cases?*—An important deduction may be drawn from the microscopical examinations found annexed to the cases. In no case was sarcoma seen to undergo conversion into a carcinoma or be in any way associated with it. The converse was also true. As truly as the carcinoma is an epithelial production, and the sarcoma allied to the connective substance group, and as truly as these normal tissues keep asunder from one another in health, so also do they in disease. Carcinoma is almost always associated with inflammatory deposits within the area of its extension, and takes its origin

from preëxisting epithelial elements, so that they may be found incorporated in it, as for example in the breast, where it may sometimes be seen that there is a gradual change from the secreting tubular gland tissue to the solid branching cylinders of which scirrhus is made. How far we have a right to call such growth adeno-carcinoma is doubtful, because we do not know whether the gland tissue is a new or old formation. The essential difference between inflammatory deposit and sarcoma needs to be more thoroughly insisted on.

20. *Relation between the Variety of Carcinoma and the Site.*—Some important clinical facts may be derived from these statistics, confirming previous ideas. The site determines the kind of disease. Given cancer of the breast, and it will almost certainly be scirrhus. Given cancer of the lip, and it will almost certainly be epithelioma. Given cancer of the eyelid, and it will almost certainly be rodent ulcer —of the liver, it will almost certainly be encephaloid.

The cases of colloid, encephaloid, and cauliflower growths are too few to serve as a basis for comparison. As given in full in the register of cases, and in the tabular form, they exhibit the chief points of interest. No general conclusions are given which apply to all cases of cancer, and there is no advantage in thus classifying them together. Their clinical characters are as different as the microscopical, and each group should be studied separately.

REGISTER OF CASES AND PATHOLOGICAL REPORTS.

CASES OF EXTERNAL SCHIRRHOUS CARCINOMA.*

Case I. *Scirrhous Carcinoma of the Face.*—A. M., aged forty-three, Scotland, married, saddler. No family history of carcinoma or phthisis. Patient has had syphilis, but no other constitutional disease. A growth first appeared in the region of Steno's duct, on the right side, during the latter part of October, 1875. From this time it gradually increased in size up to April 19, 1877, when it was removed through the mouth. The only symptom of the affection up to its first removal

* i. e., accessible to the knife.

was numbness in the whole of that side of the face. The following report was rendered on the growth at that time: "The firmer portions of the tumor are made up of ordinary fibrous tissue, surrounded by a large amount of fat." It seems quite probable that this first growth was not completely removed; indeed, it was so stated by the writer at the time, and the microscopic report was consequently illusory; a clearly defined tumor was observed some months later (October, 1877). At this time it grew more rapidly, and was accompanied by pain of a throbbing nature, especially during wet weather. Having attained considerable size, it was again removed, November 25, 1878. If this growth had been at first removed *in toto*, it would confirm the generally received idea that growths at first benign may become malignant. But the inference would be improper in this particular case. The following is a condensed account of the second pathological report: The growth lay just beneath the skin in the parotid region, and was about the size of a hen's egg, surrounded externally by a thin capsule of fibrous tissue, just within which was a layer of fat about one fifth of an inch thick. On section through the tumor, its center was gray in color, and apparently in a state of fatty degeneration. Examined microscopically, some parts exhibited the appearances of acinous gland structure, the gland tubes being distinctly seen with their internal coating of wedge-shaped epithelium with nuclei near the walls; at other points the tubes were packed full of granular débris, which had pressed so hard against the epithelial corpuscles that they were flattened out and looked like the pavement bodies. At other points distinct evidence of cancer existed, in the form of epithelial collections grouped in well-marked connective-tissue alveoli. It was therefore stated to be an adeno-carcinoma, and its recurrence was predicted. The gradual transition of the acinous structure into the carcinomatous seemed quite apparent in this case, and indicated the propriety of giving it this distinctive name. The growth had not returned up to February, 1879.

Case II. *Scirrhous Carcinoma of the Breast.*—J. C., housewife, aged forty-eight, Ireland, married. She has an exceptionally good family history, and her health is said to have

been excellent up to eight years ago, when the menopause took place; since this time she has suffered from increasing general debility. Twenty-six years ago she had an abscess in the right breast. In September, 1877, she first noticed a tumor on the inner side of the same breast. She gives no history of mechanical injury, and assigns no other cause for the growth. Up to four months ago the tumor did not give her trouble; at this time it took on more active growth, with sharp paroxysmal pain, and became very sensitive to pressure. The only treatment prior to operation was by local anodynes. It was removed on September 17, 1878. The points of interest in this instance are the facts that the growth started without any apparent cause other than the abscess alluded to, and, after a long period of general debility; that it remained nearly stationary for eight months, and then took on an active growth, accompanied by great pain. At the time of the operation no axillary glands were enlarged. Convalescence progressed favorably, and up to date (February 1, 1879) there has been no evidence that the disease has returned.

Pathological Report.—According to the microscopic report furnished at the time, the growth was stated to be chiefly made up of a fibrous framework, filled in with epithelial corpuscles, having bright nuclei. Its recurrence was inferred as a matter of course.

Case III. *Scirrhous Carcinoma of the Uterus, Vagina, and Rectum.*—Mrs. P., aged forty years, England, housekeeper, New York City. No family history of carcinoma or phthisis. Excellent health up to April 14, 1874, when a tumor was first noticed involving the os uteri. No history of injury was given. Almost the first symptom was profuse hæmorrhage, vomiting, and pain of a very severe character. The os was amputated at the utero-vaginal junction, and the whole cavity of the uterus scooped out with the galvano-cautery spade, on September 15, 1874. Subsequently the case progressed favorably, the pain and unpleasant symptoms being for the time almost entirely relieved. The case is interesting for the reason that no recurrence was observed for five months, when it appeared in the same place, resulting in the death of the patient, March 24, 1875,

from gradual exhaustion due to extension of the disease into the bladder and rectum. The notes of the microscopic examination made at the time of the operation were as follows: "The growth consists of spindle and round cells; many of the cells are stellate, and imbedded in a basis substance that is structureless." This examination was preliminary and no other followed. The cells here described belonged to the indurated edge of the growth, which was one of the ulcerative variety. This case also illustrates a point of some importance, and to which reference has already been made. It is not always possible to give a report upon any portion of a growth, though malignant, which is sent for microscopic examination. Sometimes merely the thickened and indurated edge is sent; it may consist wholly of fibrous tissue—the wall that nature is erecting against the extension of the disease. Sometimes and not infrequently, both in scirrhous carcinoma of the uterus and epithelial carcinoma of other parts, the diseased tissue may be thrown off almost as rapidly as it is formed, and the microscopic examination, without the clinical history, might lead to the most incorrect prognosis. In this instance the tissue was so charred by the cautery-knife that only a very small portion was suited for examination, and this appears not to have exhibited anything pathognomonic of carcinoma. The clinical symptoms, however, gave unmistakable evidence of its true nature, and the treatment was directed accordingly.

Case IV. *Scirrhous Carcinoma of the Breast.*—C. M., aged forty-six, Switzerland, married, washerwoman. This case is interesting in many respects. The patient gave a family history of both carcinoma and phthisis, one sister dying of carcinoma; her father and mother of phthisis; while she herself is said to have been always remarkably healthy. The growth first appeared in March, 1877, as a small tumor about the size of a walnut, in the right breast; it grew very rapidly, and for the three months prior to operation was very painful; the breast was of stony hardness, and tender on pressure, but the nipple was not retracted. A few days before removal it was noticed that the axillary and supra-clavicular glands were enlarged, which probably had been the case for some time.

During the removal of the numerous enlarged lymphatic glands the axillary vein was cut, and the patient never rallied, dying of septicæmia June 16, 1878, five days after the operation.

The microscopic report is as follows: "The growth was very hard, and made up chiefly of fibrous tissue, but at various points distinct collections of epithelial corpuscles in connective-tissue alveoli were seen." It was accordingly classed as a scirrhous carcinoma. This case corroborates an observation that has been made, viz., that the prognosis when the supra-clavicular glands are involved is apt to be very bad, for it was found that the disease had extended very deeply, a fact which was not at first noticed, as the patient was unusually fleshy. The fatal issue was doubtless precipitated by the accident above referred to.

Case V. *Scirrhous Carcinoma of the Breast.*—M. R., forty-five, Ireland, married, servant. Family and previous history deficient. The growth was first noticed three weeks before the operation (November, 1878), and was accompanied by the most severe and lancinating pain. It was removed December 2, 1878, and had not returned up to date (January, 1879).

Case VI. *Scirrhous Carcinoma of the Breast.*—E. S., thirty-six, England, married, housewife. Good family history. The patient had always enjoyed good health prior to her present trouble, which commenced, as she said, on the first Sunday of December, 1875, when she received a blow on the left breast. The following Tuesday a swelling the size of a hen's egg was found in the upper portion of the same breast; it was soft, fluctuating, and variable in size. The following spring she went to a quack and had it anointed and rubbed, after which it became hard, painful, and commenced to grow; over the tumor was a small, warty excrescence, of purplish color. During this time the patient's health was excellent. The breast was removed August 7, 1876, by Dr. C. K. Briddon. The patient made a good recovery, and remained well and apparently free from disease until July, 1877, when she first noticed a hardness in the cicatrix. This spreading rapidly, a second operation was performed by the same surgeon September 20, 1877. She again made a fair recovery; but the growth soon returned,

resulting in her death from the disease and exhaustion, in September, 1878. The lymphatic glands were enlarged at the time of the operations.

Pathological Report.—Microscopic examination showed the growth to be a scirrhous carcinoma. It was thought that the disease returned metastatically in some of the internal organs.

Case VII. *Scirrhous Carcinoma of the Breast.*—H. M., forty-five, U. S., single, dressmaker. Family and previous history good. In April, 1870, the patient first noticed a small lump just above the middle of the right breast (following a blow). It gradually increased in size, and was accompanied by burning and lancinating pain. Removed May 20, 1874.

The operation was followed by freedom from pain, but the growth returned in the cicatrix, and spread more rapidly than before, causing her death, September 3, 1875. The end was supposed to have been hastened by phthisis.

Pathological Report.—"Microscopic examination of the tumor shows the appearances of carcinoma; cells of an epithelial character are abundant, and are arranged in alveoli and branching tubes. The fibrous tissue is moderate in amount."

Case VIII. *Scirrhous Carcinoma of the Breast* (*Adeno-Carcinoma*).—S. T., forty-five, married, housewife, furnishes an interesting history. Her father died of an epithelioma of the lip. The patient's previous health had always been good up to the latter part of October, 1874, when she first noticed at the lower margin of the breast a small horizontal ridge, which was exceedingly hard but not painful. Soon after, it became painful at night; the hardness extended rapidly, and soon involved the whole breast. In the spring following, a purplish non-painful excrescence sprouted out from the inner margin of the same breast, was movable, and could be separated from the pectoral muscle. Other growths of a similar character soon followed, until the whole gland became studded with these fungous masses. They increased in size, became confluent, and formed one large mass. Some of these little tumors had vesicles on their surface, which, when opened, would exude both serum and blood. The tumor

which appeared first began to ulcerate early in July, 1876, discharged quite freely, and bled at the slightest provocation. Since then others have undergone the same change. During the last two months the pain had become more severe and the discharge more offensive. The axillary glands were also involved. There was no other special disease at the time of the operation. The breast was removed October 26, 1876, but the pain was only relieved in part and for one month, the growth returning almost immediately in the cicatrix. The new growth was cauterized, but the disease made steady progress, and the patient died from exhaustion in June, 1877. No treatment had been adopted prior to the operation.

The pathological report is as follows: "The whole surface of the breast was covered with large excrescences, some of them pale, soft, and flattened; others small, rounded, and pink in color; the larger ones were surrounded by numerous smaller ones. The nipple was not retracted, and the breast was not hard. On making a section through the breast it was found that many of these nodules were distinctly encapsulated, so as to be readily moved out of their bed. The texture of these growths is soft and friable. On microscopic examination we found that, whether in the surface or in the body of the tumor, they have the appearance of adenoma, that is, a collection of epithelial bodies often arranged distinctly around a central lumen. The nuclei are near the wall, and the epithelial bodies are broader toward the wall than toward the center; the interstitial tissue is exceedingly small in amount (it contains no elastic fibers) in the center of the breast." Another subsequent report states that "the epithelial bodies are more closely packed together, there is no lumen, and the interstitial tissue is infiltrated with lymphoid cells; the glands in the axilla are enlarged, and contain collections of epithelial corpuscles." This is another instance in which the transformation from adenoma to carcinoma was noticed.

Case IX. *Scirrhous Carcinoma of the Face.*—E. W., sixty-six, England, widow, New York City. The patient's mother died of carcinoma. Her own health has always been good up to October, 1877, when a wart appeared inside the left nos-

tril; grew rapidly larger, suppurated, soon broke and discharged considerable offensive matter, and was accompanied by gnawing pain in the part. The growth seemed gradually to creep along under the skin, involving the face to such an extent that the vision of the left eye was interfered with. In October, 1878, the tumor occupied the anterior half of the cheek, extending up along the side of the nose and down as far as the angle of the mouth, but did not encroach upon the buccal cavity. It was with difficulty removed, October 8, 1878. The pain was partially relieved by the operation, but the growth returned during November, 1878, and has spread more rapidly than before, being so extensive that a second operation could not be performed. It is now, January 1, 1879, growing rapidly.

Pathological Report.—Upon microscopic examination it was found to be composed of a fibrous stroma surrounding epithelial collections. These collections were masses of epithelial corpuscles, having no systematic arrangement or intervening substance. The epithelial elements varied in size from $\frac{1}{2000}$ to $\frac{1}{2500}$ of an inch in diameter. The fibrous stroma was thickly studded with small round bodies, probably lymphoid corpuscles, which would indicate an active growth. A speedy return was prognosticated.

Case X. *Scirrhous Carcinoma of the Breast.*—A. K., thirty-five, New York, married, housewife. The patient gives a family history free from carcinoma. Her previous health has always been good. In February, 1876, she first felt pain in her right breast, after severe exercise. At this time the patient discovered a tumor in the upper part of the breast, which was not painful to the touch until May, 1876. At this time the axillary glands also became involved. The growth was removed, June 1, 1876. On the 28th day following the operation a hard line was noticed in the axilla; on August 15th, a return of the growth was noticed in the cicatrix, which was cauterized on the 26th of the same month; but from that time on she suffered great pain in the breast, and gradually but steadily sank, dying from pain and exhaustion, October 1, 1876. The operation did not relieve the pain.

Pathological Report. — The microscopical appearances noted were those of scirrhous carcinoma.

Case XI. *Scirrhous Carcinoma of the Male Breast.*— Mr. K., sixty-one, United States, widower, clothier, with a family history of phthisis, has suffered from syphilis, but otherwise has always been healthy. In October, 1873, he first noticed that the nipple of his right breast was ulcerated (no cause could be assigned for it) and becoming inverted. This has gradually increased; the whole breast became hard and painful. The interesting point of the case is its slow progress and its association with syphilis. The breast was removed, October 2, 1878, and the pain was arrested. No return has been observed up to date (January 1, 1879). No lymphatic glands were involved. Fowler's solution had been given, but with no satisfactory effect.

Pathological Report.—Microscopically the main tumor, and the three smaller ones lying just around outside of it, were found to be composed of a fibrous stroma, surrounding very irregular collections of epithelial corpuscles, with an intervening substance. These epithelial collections were of various shapes. The growth was pronounced a scirrhous carcinoma, and a recurrence predicted.

Case XII. *Scirrhous Carcinoma of the Breast.*—C. H., fifty, Ireland, single, milliner. The family history is good, and free from carcinoma. Previous health has always been fair. The right breast has always been larger than the left, but has never been painful. In October, 1874, the patient first noticed a small tumor above and to the outer side of the right nipple, with no definite history of injury, although she thinks she received a slight blow on the breast some years ago. The tumor gradually increased, with no pain, up to January 14, 1875, when the breast was removed. The growth returned in the flap, April 20, 1876, and was again removed, May 1, 1876. The patient died, May 8, 1876.

Pathological Report.—The tumor is small, nodular, and firm, having a diameter of about two and a half inches. The color is slightly yellower than the normal breast, and considerably firmer. These characteristics are uniform throughout the growth. Microscopically it consists of a connective-

tissue basis tissue in which are cylinders branching in an arborescent way; these cylinders are larger than usual.

Case XIII. *Scirrhous Carcinoma of the Breast.*—W. P., æt. forty-six, Ireland, married, seamstress. This case presents some interesting points. One of the patient's brothers died of a tumor situated under the arm, and the other members of the family of phthisis. The patient was always healthy until January, 1873, at which time an abscess formed in the left breast, without any apparent cause. After the abscess burst and discharged, the breast remained hard and began to enlarge, and was the seat of burning, shooting pains. She had for years previously suffered from pain in this breast. In February or March, 1874, hard lumps were noticed in the armpit. The growth was removed by Dr. R. F. Weir, in June, 1874. There was temporary relief from the pain, although the lymphatic glands were involved. Its return and progress do not seem to have been very rapid, for, although it returned in the same place, and is said to have grown just as rapidly as before, she lived until June, 1877, fifty-three months from its first appearance, and thirty-six months after operation. The patient's death was ascribed to the return of the disease.

Pathological Report.—The growth presented under the microscope the ordinary appearances of scirrhous carcinoma.

Case XIV. *Scirrhous Carcinoma of the Breast.*—M. A. W., æt. forty-eight, Ireland, widow, cook; family history not obtained. The patient's previous health had always been good up to January, 1869, when she first noticed a small tumor on the inner side of the right nipple about the size of a bean and of a purplish color. In two or three weeks the tumor disappeared; but prior to this there was a slight discharge from the nipple. A year later, a tumor somewhat larger made its appearance in the same place, and disappeared in two or three weeks with no discharge either from the nipple or the tumor. Like the first, it gave a slight amount of pain. A year later there was a bloody and sero-purulent discharge from the nipple, which continued about four months, producing no pain about the breast. About one year after the discharge ceased, she felt twitching pains in the breast, though they would also intermit for several days. About this time

she again noticed a tumor at the site of the first, and at the end of two months the pain had become knife-like. On December 19, 1872, the breast was removed by Dr. Gurdon Buck, and the pain was relieved. But in the following March, 1873, she again commenced to have sharp pain, and in April, 1873, the growth was returning in the cicatrix. This growth and some enlarged lymphatic glands were removed by Dr. D. M. Stimson in August, 1873. But it rapidly returned in the flaps and was a third time removed (October 14, 1873, by Dr. Mount). Since this time, on November, 1873, the record of the patient is deficient, as she can not be found nor any history of her obtained.

Pathologist's first report, which was of the breast first removed: "The specimen was prepared for examination in the usual manner. It was first immersed in Müller's fluid and removed at the expiration of a week and placed in alcohol (eighty per cent.). Sections were then made, stained, and mounted. The microscopical appearances were the same as are usually found in scirrhous tumors of this locality. Cells of an epithelial character were arranged in closely-compressed masses and were packed in tubules or alveoli. There was no intercellular matter. The stroma consisted of fibrillated connective tissue in such large amounts that the name of scirrhus is proper for this variety of carcinoma."

The pathological report on a small nodule, removed by Dr. Mount from the same patient, says: "On making section through the mass, it was found to be rather soft internally, though not broken down in any part. The area of softening, which had a whitish yellow color, extended nearly to the margin of the skin. In and about it were spots of a reddish color. The surrounding tissue was firm, and in many places had a gelatinous look. Examination of the softened spots, with the microscope, showed that the cells here were somewhat more granular, and undergoing fatty degeneration; that the reddish spots were areas of extravasated blood, and in the more transparent portions there was evidence of very rapid cell-growth. The cells were of the epithelial variety and were nested together in alveoli, containing from five to twenty corpuscles in each. These appearances belong to carcinoma." [Evi-

dently the variety scirrhus is to be inferred from the description.]

Case XV. *Scirrhous Carcinoma of the Breast.*—E. T. S., aged sixty-three, U. S., widow. The family history good. The patient's health had been good up to November, 1876, when she first noticed an excoriation of the nipple, which came on without assignable cause and gave slight pain. Six months later (in May, 1877), a tumor appeared in the breast but was only slightly painful. In April, 1877, the axillary glands became involved. For the eight months prior to November, 1878, she noticed that the breast enlarged rapidly, and she suffered much from pain in the arm of the affected side, and also from pains shooting through the chest to the scapula. In September and October, 1878, the pain became more intense, due, the patient said, to the application of electricity. The growth was removed, November 25, 1878. The operation was followed by relief of pain. No return of the growth up to date (January 1, 1879). Extract from pathological report: "Microscopically the growth was composed of a large amount of fibrillated connective tissue, forming here and there fibrous spaces which were filled with large irregularly-shaped epithelial corpuscles, without any definite arrangement. The epithelial corpuscles were very granular, and the nuclei very indistinct. Numerous elastic fibers are seen running through the section." It was classed as a scirrhous carcinoma, and its recurrence expected.

Case XVI. *Scirrhous Carcinoma of the Breast.*—Mrs. A., aged thirty-three, Ireland, married, housekeeper. The patient has had no children; general health always good, but her temperament nervous. About May, 1876, she first noticed a tumor in the breast, lying just beneath the skin. It grew to the size of one's clinched fist, but produced no pain. No treatment was adopted before operation. The breast was removed at the college clinic by Dr. J. L. Little, in May, 1878. The wound did not heal by first intention. A modification of Lister's method was used. In August, 1878, the axillary glands were noticed to be enlarged, and the growth had returned in the cicatrix or beneath it, and, this time, was accompanied by sharp lancinating pain. For several months

after its second appearance, it did not grow, and even appeared to be getting perceptibly smaller. The pain of the return growth was much relieved by equal parts of the stramonium and belladonna ointment (last date August, 1879).

Pathological Report.—When examined microscopically, the growth presented the ordinary appearances of scirrhous carcinoma.

Case XVII. *Scirrhous Carcinoma of the Breast.*—Mrs. L., aged seventy-six; married. This is a most remarkable case, showing the long duration of the disease. No family history of carcinoma; individual health always good. Twenty-one years ago, or September, 1857, the disease first appeared in the right breast; two years later, or in 1859, in the left. During the intervals she had enjoyed good health. The growth was removed in the first breast 18 years after its first appearance, and from the second breast 16 years after its first being attacked. Operations were performed by Dr. R. F. Weir in 1875, 1877, and 1878, but the disease returned each time in nearly the same locality, the last recurrence invading the sternum. All these specimens were examined by Dr. F. Delafield or Dr. T. E. Satterthwaite. The operation relieved the pain, but the growth returned in the axillary glands. For the last two years she has taken "cundurango," which has been found to act well as a tonic, but in no other respect exerts any good influence (Dr. Weir).

Pathological Report.—It is fortunate in this case that the microscopic examination was corroborated by so excellent an authority as Dr. Delafield. It is another instance of those remarkable cases of cancer spoken of by some of the older surgeons. Dr. Weir states that the growth in each case was stated to be scirrhous carcinoma.

Case XVIII. *Scirrhous Carcinoma of the Breast.*—Mrs. C. S., widow, aged fifty-six, U. S. The following is another exceptional case. The history was kindly furnished by Dr. Robert Newman. The patient, a resident of Albany, came under observation in December, 1875. Her previous health had been pretty good, though she had suffered from debility. Two years ago (December, 1873) she noticed a hard lump in the right breast, the size of a pea. She is not certain whether

it came from an injury, though she did receive a kick there sixteen years ago. There was no cancer in the family, and, up to the appearance of the disease, she had been well in body and mind. The tumor at first was not painful, but became so in October, 1875, and is described as pricking, darting, or smarting. The pain was paroxysmal. At this time (December, 1875) there was an enlarged gland in the axilla. The growth was found to involve a large part of the right breast —to be uneven—lobular, as it were, and hard to the touch. The circumference was 13 inches and diameter 4 inches. Ulcerations or softenings had commenced in the surface, and there had been hæmorrhage from it. Patient was very weak, and could not walk two blocks. After electrolysis had been practiced several times, the patient "regained good health, and could walk very long distances." No treatment had been pursued when she came into the hands of Dr. Newman. Electrolysis "was given by weak currents repeated," the "diseased parts looked better, and tumor became smaller." Patient's health and strength improved for one year, until October, 1876.

"After patient returned to Albany, she was without treatment; she began to fail and grow weaker and weaker, and died one year after" (or October, 1877).

She died of asthma. According to the microscopic report (kindly returned me by Dr. Newman), I find that the growth is stated to be "undoubtedly carcinoma," and the variety would, from the clinical history, be scirrhus.

Case XIX. *Scirrhous Carcinoma of the Neck.*—J. R., aged forty-four, carpenter; no family history of carcinoma, but one of phthisis and syphilis. Patient's general health has always been good. In December, 1872, he first noticed a swelling on the right side of the neck, gradually increasing in size and giving severe pain. In February, 1873, the tumor was incised, but no matter escaped, though its growth was for a time retarded. It was situated on the side of the neck, as a raised lobulated mass, 9 inches in circumference; internally it was in close contact with the great vessels of the neck. The growth was removed, April 29, 1873. No history of the case could be subsequently obtained, as the patient lives in a neigh-

boring city (Paterson), and no response has been received to letters of inquiry.

Pathological Report.—Microscopic examination showed that the growth consisted of quite large cell elements in a pretty distinct reticulum. The prognosis given was unfavorable.

Case XX. *Scirrhous Carcinoma of the Breast.*—A. G., aged forty-two, single, Ireland, child's nurse; no family history of carcinoma. The patient has always been strong and healthy up to two years prior to death (January, 1877); at first she noticed a small lump in the right breast, which grew rapidly and became very painful. It did not come from an injury, nor was there cancer in the family. Excision was performed in July, 1877, eighteen months prior to death; relief was temporary. Soon after she began to have lancinating pain in the cicatrix, though no tumor appeared. The superficial lymphatic glands were from time to time temporarily enlarged; she suffered great pain, and, gradually losing strength, died, January, 1879.

Pathological Report.—The primary growth, which first occurred in the breast, was not examined, but the return growth in the spleen, liver, and mesenteric glands was. It presented the following microscopic appearances: the little nodules which studded the liver and spleen exhibited the evidences of cancer in the form of very delicate connective-tissue alveoli, with an abundant epithelial deposit within the alveoli. Accordingly, the growth was classed as a *medullary* carcinoma. In the present classification it is among the scirrhous carcinomata, because from the clinical history it is presumed that in its early development the structure was scirrhus. We see by reference to other cases that the metastatic disease of internal organs following scirrhus is apt to be medullary.

Case XXI. *Scirrhous Carcinoma of the Breast.*—H. B., aged thirty-seven, Ireland, married, housewife. The following account was given: An aunt died of carcinoma of the breast; but the patient had always enjoyed good health, and received no injury to account for the disease. In August, 1877, she first noticed a tumor in the right axilla. Five months later, one near the nipple on the same side. Three months later, one between

the two. The tumors seemed to be rather superficial, involving the skin chiefly. She suffered but little pain or inconvenience. They were removed, September 24, 1878, and she has had no subsequent trouble.

Pathological Report.—The growth upon microscopic examination was seen to be made up of epithelial collections in connective-tissue alveoli, and was classed as a scirrhous carcinoma. It would seem from the description that this disease commenced in the axillary glands primarily, and then secondarily in the breast. This circumstance seems too extraordinary for belief. Unfortunately the whereabouts of the patient has not been found, and it has been impossible to get any further light in the matter. If true, it would establish a point which is doubted by excellent authorities, i. e., that carcinoma can originate primarily in lymphatic glands.

Case XXII. *Scirrhous Carcinoma of the Breast.*—A. F., aged forty-two, England, widow, dress-maker. She gives no family history of carcinoma. Individual health has always been good. In April, 1873, she first noticed a painful lump in the outer side of the left breast; it gradually increased in size up to three months ago (or November, 1873), when it took on new and vigorous action, and grew rapidly larger, giving severe burning pain. The nipple became retracted, and the axillary glands were involved. January 9, 1874, the growth was removed by Dr. R. F. Weir, after which she had severe sinking, fainting spells, with twitching of the opposite side of the body. In March, 1874, she began to have intense pain in her chest. A few days after, double pleurisy and pneumonia of one lung were diagnosticated, and were supposed to have caused her death (April 7, 1874). No cause, whether of injury or hereditary taint, was assigned to it.

Pathological Report.—The tumor was fibrous in consistence, involving the mamma. On microscopic examination collections of epithelial corpuscles were found, with but little connective tissue between them. The subsequent description places the growth under the scirrhous variety of carcinoma.

Case XXIII. *Scirrhous Carcinoma of the Breast.*—M. J., aged forty-three, Ireland, single. The case is interesting as showing the effect of arsenical paste. No family history of

carcinoma. Ten years ago the patient had an injury of the breast, followed by considerable pain. In July, 1872, she first noticed a tumor in the upper part of the left breast, which gradually increased in size, with very little pain, up to March, 1873. Then a cancer doctor applied arsenical paste, and a large slough came away, accompanied and followed by intense pain. It partly healed, but broke out again, when the paste was applied a second time; but, instead of healing, it rather increased its size. The patient became very anæmic and the wound yielded very offensive pus. The whole ulcerating mass was removed, February 15, 1874. The wound healed kindly. The patient was relieved of pain. She died December 18, 1875, of phthisis; the cancerous disease having never returned.

Pathological Report.—The growth was found to invade the muscular tissue of the pectoral muscles. A portion examined showed abundant epithelial corpuscles in acini.

Case XXIV. *Scirrhous Carcinoma of the Rectum.*—L. S., aged thirty-six, Ireland, single, dress-maker, with a family history as follows: One aunt died of carcinoma, and all the others of phthisis. Personally, she had always enjoyed good health up to September, 1876, when she commenced to suffer from slight nocturnal backaches. Eighteen months later the pain increased in severity, and was accompanied by tenesmus and bleeding from the rectum. This condition lasted two months, followed by freedom from tenesmus and pain for two months, when the former condition returned in a more aggravated form. There were also obstinate constipation, bloody discharges, and gradual loss of flesh. This condition continued up to the time of the operation, September 19, 1878; death, September 29, 1878. The patient died of uræmic coma. The kidneys were extensively diseased, one nearly cirrhotic.

Pathological Report.—The growth involved the right lateral portion and posterior half of the rectum, commencing about three inches above the anal orifice, and extending up about three inches. It occurred as a deep funnel-shaped ulcer, with irregular and raised edges, the mucous membrane around being thickened to a slight extent. The gut was contracted at two points, its lumen at the lower stricture being about

one half an inch; at the upper about one third of an inch. The diameter of the ulcer was two and a half inches, the depth one and a half inch. It was in the hardened mass behind the deepest portion of the ulcer that evidence of cancer was found. In making a microscopic examination of the rectum at a point midway between the anal orifice and the sigmoid flexure, at which point the diameter of the strictured gut was not more than half an inch, it was found that an active infiltration of the parts existed, the new corpuscles being apparently lymphoid. They existed in the epithelial coating of the surface of the intestine about the crypts of Lieberkuhn, in the submucous and muscular tissue. The crypts were lengthened, measuring on an average one thirty-seventh to one twentieth of an inch. The muscular tissues were only slightly thickened, the circular chiefly. Portions of the gut, in the thickened substance which formed the mass, were adherent to the right sacro-sciatic ligament. The evidence of carcinoma, in the shape of epithelial nests in connective-tissue alveoli, was found.

Case XXV. *Scirrhous Carcinoma of the Breast.*—E. A., aged sixty-eight, Ireland, single. Does not know of any carcinoma in her family. In March, 1873, the patient noticed a pimple on the left breast, but it was not until 1876 that there was a tumor; then it gradually enlarged without pain. At this time she suffered from cephalalgia. The tumor was removed March 6, 1877, November, 1877, February, 1878, and May, 1878. The growth returned after each removal, and during the last three months the axillary glands have become involved, and it seems that she has suffered intense pain, and now the tumor is growing rapidly.

Pathological Report.—The primary and recurrent growths presented the characteristic alveoli and stroma of scirrhous carcinoma.

Case XXVI. *Scirrhous Carcinoma of the Breast.*—M. A. J., aged fifty-three, New York, married lady. The following history was given: No antecedent carcinoma known. (One of her children died of cancer of the eyeball, which was almost certainly not cancer in the sense that we are considering it, but some form of sarcoma, since carcinoma of the eyeball is a comparatively rare disease.) Her general health has always

been good. The tumor first appeared in the left breast early in December, 1875, without assignable cause; gradually enlarged without much impairment of her general health. The growth produced both sharp and lancinating pain. The breast was removed, October 25, 1876. There was entire relief of pain for nearly a year, when the growth returned (in October, 1877) within a portion of the cicatrix, and was accompanied by slight enlargement of the lymphatic glands of the left axilla. The return growth, however, did not extend as fast as the primary. The patient, however, gradually sank, and died of exhaustion, June 14, 1878.

Pathological Report.—The breast was not much enlarged, the change occupying but a small portion of the interior. It presented the appearances of scirrhous carcinoma.

Case XXVII. *Scirrhous Carcinoma of the Breast. Reported Cure by a Cancer Doctor after Removal by the Knife and Involvement of the Axillary Glands.*—C. F. C., aged fifty, U. S., married, presents the following points of interest: One of her family died of a uterine tumor, but her own health has always been good. The growth first made its appearance as a tumor of the breast in December, 1871, gradually increased in size, was accompanied with considerable pain, and was treated at first by pressure, without the desired effect. It was removed by the knife, June 10, 1872, and returned in the same place in five months (or November, 1872), when it grew very rapidly, and progressed toward the axilla. When she went to a cancer doctor, he pronounced her case a doubtful one, but in seven weeks caused all trace of the growth to disappear, and she is at the present time free from any difficulty, and a strong and healthy woman, according to reports from her family (January, 1879).

Pathological Report.—Thinking that there might, in this case, be some doubt as to the diagnosis, or that an error had been committed, the growth has been reëxamined and found to give all the appearances of scirrhous carcinoma. This indeed is a remarkable case, and the credit does not belong to the knife.

Case XXVIII. *Scirrhous Carcinoma of the Breast.*—R. R., forty-four, United States, single, housekeeper. No family

history of carcinoma. General health always good. The tumor first made its appearance in the right breast, March, 1876. One month prior to its appearance she received a bruise on this breast. For several months a painful tumor had existed in the axilla, but up to February, 1878, had given her little or no pain or discomfort. At this time it became very painful, and the glands became involved. At the outer side of the nipple was a flattened spot of almost cartilaginous hardness. The whole breast was very hard, not tender to the touch, but very painful. The growth was excised, March 7, 1878, and all the enlarged glands could not be removed owing to their near relation with important vessels, but the pain for a time was relieved. In June, 1878, however, the glands that were left behind took on a more active development, and her painful and distressing symptoms returned. She then gradually and steadily sank, and is probably dead by this time, January, 1879.

Pathological Report.—The growth was found to be made up of fibrous tissue forming alveoli, which were filled with epithelial elements. It was classed as a scirrhous carcinoma.

Case XXIX. *Scirrhous Carcinoma of the Breast.*—A. McK., fifty-two, Ireland, married, housekeeper. The patient's father died of a carcinoma, but her general health has always been good. In January, 1876, without assignable cause, a tumor showed itself in the left breast; for one year it gave her no trouble, when it began to grow more rapidly. The nipple became retracted, but it gave her little pain, and then only when working hard. In January, 1877, the axillary glands were enlarged. In January, 1878, the tumor was removed, and all annoying symptoms relieved. Up to date (January, 1879) there has been no return of the disease.

Pathological Report.—This growth was found to be composed of connective-tissue alveoli, filled with epithelial elements. It was classed as a scirrhous carcinoma, and its recurrence inferred.

Case XXX. *Scirrhous Carcinoma of the Breast.*—C. S., aged forty-three years, New York, widow, housekeeper. Father probably died of carcinoma of the liver. When the patient's youngest child was 8 months old, an abscess

formed in each of her breasts, but soon healed. In August, 1876, a tumor appeared in the right breast, increasing gradually. During the last four weeks it has increased rapidly, becoming very painful and nodulated. It was first removed on April 24, 1877, and the pain was relieved. It returned in the cicatrix and grew more rapidly; was again removed January 5, 1878, again January 1, 1878, and again September 19, 1878. The axillary glands had become involved.

Pathological Report.—The growth was found to present the appearance common to scirrhous carcinoma, in the shape of epithelial collections in fibrous alveoli.

Case XXXI. *Scirrhous Carcinoma of the Breast.*—A. S., aged fifty-one years, England, married. No family history of carcinoma. The patient's general health has always been good; she had mammary abscess after the birth of her only child, which is the only ascribable cause for the growth, which began January, 1877, in the left breast, and gradually increased from a hardened base until the whole gland was involved. The pain which it produced was at first dull, then lancinating. Subsequently the axillary glands were involved. She was treated at first by arsenic, but was finally operated on in June, 1877, and the pain was relieved for a time, but the wound never entirely healed. The tumor returned almost immediately at the site of the operation, and the patient died, July 18, 1878, from exhaustion.

Pathological Report.—Microscopic examination showed that the tumor was a scirrhous carcinoma.

Case XXXII. *Scirrhous Carcinoma of the Breast.*—Mrs. S. J., aged thirty-six years. The growth first appeared in the breast, and was removed June 6, 1876. The results of the microscopic examination in this case (T. E. Satterthwaite) were as follows:

"The tumor is a carcinoma of the scirrhous variety; it is partially inclosed in a dense fibrous capsule, and the interior has degenerated, so that the center consists of oil and granular *débris*, the result of breaking down of epithelial cells. The intermediate tissue is carcinomatous." The patient died two years after, and the autopsy by Dr. Adler disclosed "a noticeable tumor in the cicatrix, metastasis in lungs, liver,

spleen, intestines, kidneys, heart, and nearly all the lymphatic glands met with." "The several tumors were all of the soft variety, made up principally of epithelial cells—only little connective tissue." This case corroborates the previous statement that, when a recurrence takes place in the internal organs, after scirrhus of external parts, the disease is generally, if not always, medullary.

Case XXXIII. *Scirrhous Carcinoma of the Uterus, Bladder, and Rectum.*—Mrs. M. B., aged forty-seven, New York, widow, housewife. No family history of carcinoma. The patient's health had always been good up to August, 1876. About this time she ceased to menstruate, but for some time after had severe hæmorrhages from the uterus every two weeks, accompanied by intense pain in the back and down the thighs. During the interval she would have an offensive leucorrhœal discharge. In October, 1876, a growth was first discovered on the cervix. The pain was so intense that she was deprived of sleep. It was removed in October, 1876. The pain was partially relieved, but it soon returned, involving in its progress the uterus, bladder, and rectum. She died from exhaustion in October, 1877. The growth was examined microscopically, and reported to be scirrhous carcinoma.

Case XXXIV. *Scirrhous Carcinoma of the Breast.*—Mrs. D., aged sixty-five, Scotland, married, seamstress. No family history of carcinoma. The patient's general health has always been poor. In March, 1876, she first noticed a tumor in the left breast, which came, she said, from an injury, and gave her pain. It gradually increased, reaching the armpit, and involving the glands. The pain increasing, the growth was removed August 24, 1878. The growth had not returned to date (January, 1879).

Pathological Report.—On microscopic examination it was found to be a scirrhous carcinoma.

Case XXXV. *Scirrhous Carcinoma of the Breast.*—Mrs. A. McN., aged sixty, Ireland, widow. No family history of carcinoma. General health good. In October, 1877, the patient first noticed a tumor in the left breast. It grew gradually up to the time of operation, July 24, 1878, at which time the axillary glands were involved, and were also re-

moved. No pain accompanied this growth, and there was no assignable cause.

Pathological Report.—Microscopically examined, and found to be a scirrhous carcinoma.

Case XXXVI. *Scirrhous Carcinoma of the Breast.*—Mrs. C. H., aged thirty-six, Germany, married, housewife. The patient's father probably died of carcinoma. Previous health generally good. The tumor was first noticed in the right breast in July, 1874, and was ascribed to a blow received there two years previously. It did not give her trouble until in July, 1875. It then commenced to enlarge and spread rapidly, causing sharp, lancinating pains, shooting through the chest to the scapula. The tumor finally became very extensive, and invaded a great deal of the integument. It was removed by Dr. A. C. Post, May 11, 1876. The pain for a time was relieved, but the growth soon returned in the same place, grew more rapidly, and with as much pain as before. The patient died August 12, 1877, from a return of the disease and exhaustion. The axillary glands were not involved.

Pathological Report.—Microscopically the appearances of the growth were found to be those of scirrhous carcinoma.

Case XXXVII. *Scirrhous Carcinoma of the Breast.*—K. O'C., æt. twenty-eight, Ireland, married at eighteen, and the mother of four children. No family history of carcinoma. General health good; never nursed her children, but never had any inflammation of her breasts. For eight months prior to operation she suffered darting pains in both breasts; six months before this some blood escaped from the nipples. Eight months prior to operation (October, 1873) a painful tumor appeared in the right breast, just inside the nipple. Three months later it commenced to grow very rapidly, and became very painful. Operation April 24, 1875, which relieved the pain. It was thought that the growth had returned in the same place. She died September 14, 1877, from phthisis, nephritis, and dropsy. The tumor was not thought to have come from injury or any disease of the breast.

Pathological Report.—The tumor is small, nodulated, and firm, having a diameter of about two and a half inches. The color is slightly yellower than the normal breast, and con-

siderably firmer. These characters are uniform throughout the growth. Microscopically it consists of a connective-tissue basis tissue in which are cylinders branching in an arborescent way. These cylinders are larger than the ordinary ones of the healthy breast tissue, but they contain cells and nuclei resembling those of ordinary gland tissue. On the other hand, when they completely fill the tissue, they are characteristic of scirrhous carcinoma. The prognosis will depend much upon the clinical history.

It will be observed in this case that the diagnosis of scirrhus was not positively made by the microscope. The clinical history affords evidence that it was probably scirrhus and not adenoma.

Case XXXVIII. *Scirrhous Carcinoma of the Breast.*—M. A. P., æt. fifty-five, United States, married. No family history of carcinoma. General health of the patient good. The growth commenced in the right breast, and is thought to have been produced by an injury. It was accompanied by considerable pain, which was relieved by the removal of the breast, on the 28th of November, 1876. The growth, however, returned in the same place, grew more rapidly, and was very painful. She died March 3, 1877, from the return of the disease, though probably the end was hastened by a heart complication.

Pathological Report.—Microscopically the growth consisted of an abundant collection of epithelial elements in a fibrous stroma, and was classed as scirrhous carcinoma.

Case XXXIX. *Scirrhous Carcinoma of the Breast.*—Mrs. C. O'B., æt. sixty-five, Ireland, married at thirty, housewife. No family history of carcinoma. General health good. In June, 1877, the patient first noticed that the nipple of the left breast was inverted, hard, and painful. The pain at first was neuralgic, but gradually increased up to the time of operation, which was performed October 21, 1878; and at this time the lymphatic glands were involved. No relapse up to date (January, 1879).

Pathological Report.—The growth, microscopically, was seen to be made up principally of fibrillated connective tissue, forming fibrous alveoli which were filled with irregularly

shaped epithelial corpuscles, having bright nuclei. The growth was classed as a scirrhous carcinoma, and its recurrence is looked for.

Case XL. *Scirrhous Carcinoma of the Axillary Glands.*— F. B., aged fifty-nine, Germany, cabinet-maker. No family history of carcinoma. General health good. In December, 1872, he first noticed a little wart or a mole on his back, which he scratched. After this it developed into a small tumor, which was removed. But in July or August, 1873, he noticed a swelling in the axilla, which was accompanied with very severe pain. A white paste was applied, but, failing to give relief, an operation was resorted to, and performed August 5, 1874, which relieved the pain. The patient died December 1, 1875, of left hemiplegia. The cause of the hemiplegia was not given.

Pathological Report. — Cancerous degeneration of the glands. Evidence of simple cancer.

The case is interesting, showing how considerable a disease may come from a mole or wart. The axillary glands became involved secondarily and were removed.

Case XLI. *Scirrhous Carcinoma of the Upper Jaw.*— G. C. K., aged sixty, United States, married, agent. No family history of carcinoma, but one of phthisis. Individual health good, but has always been a hard drinker. Several years ago the canine or first molar tooth was partially removed, the stump being left in. After this it would occasionally ulcerate, become inflamed and suppurate. Parts around would swell considerably, giving him but little pain, until December last (or December, 1876), when the upper jaw became numb, slightly painful, and swollen. It was poulticed and opened. After this the alveolar process begun to ulcerate and the discharge was very offensive. This case grew worse up to the date of operation, April 27, 1876, when excision of the superior maxilla was resorted to. During the removal blood flowed into the trachea in such quantities that tracheotomy was rendered necessary to save the patient from immediate suffocation; but all efforts failed, the patient dying on the table.

This case is another illustration of the possible danger as-

sociated with neglecting one's teeth. A decayed stump is frequently (especially if there have been a discharge and polypoid growths about it) stated to have been the origin of a malignant growth.

CASES OF INTERNAL SCIRRHOUS CARCINOMA.*

CASE I. *Scirrhous Carcinoma of the Stomach.*—L. B., aged fifty-four, Ireland, married, coachman. The patient had always been perfectly well up to six months ago. His first symptoms were vomiting, loss of appetite and strength, and progressive emaciation; he suffered little or no pain, until near the last, when he died in great agony. On November 13, 1872, a tumor was detected in the epigastric region. Date of death, November 25, 1872. Duration of sickness, only six months.

Pathological Report.—Examination of liver and stomach showed them to be infiltrated with scirrhous carcinoma.

CASE II. *Scirrhous Carcinoma of the Stomach, Liver, etc.*—L. G., aged fifty-seven, England, clerk. The patient stated that he had always been healthy up to four weeks before admission to the hospital (September, 1877). A tumor in the epigastric region was then detected. Patient stated that he had received no injury in the stomach, and his family history was free from cancer. The pain he experienced was "sharp, cutting through to the back, down his limbs, sometimes throbbing." He had diarrhœa followed by constipation. Has been a steady drinker, and had syphilis. Died September 22, 1877. At the autopsy a cancerous mass was found infiltrating the stomach (pylorus?). It was full of fluid and clotted blood.

Microscopically the growth was regarded as a scirrhous carcinoma.

CASE III. *Scirrhous Carcinoma of the Stomach, etc.*—W. W., aged twenty-six, Ireland, married, laborer. Patient gives a good family history, and has always been strong and healthy. Nine months prior to his death he received a severe strain, to which he assigns all the difficulty. From this time on he

* i. e., not accessible to the knife.

gradually lost flesh and strength. Had a persistent diarrhœa, vomiting occasionally, and, when he died, evacuated large quantities. He had a ravenous appetite and very little pain. For a week before he died he had persistent hiccough, which could not be controlled. He gradually sank, and died August 20, 1878, from exhaustion. This case is interesting because, at the autopsy, carcinoma of the stomach and liver was found, with unusual infiltration of the alimentary tract, there being only one* such case recorded, and in that one obstinate constipation.

Pathological Report.—The growth apparently involved the pyloric end of the stomach, had spread to the liver, and involved the walls of the gut from duodenum to anus. No distinct evidence of carcinoma was found in the pylorus, although it was very much indurated and thickened, but distinct evidence of carcinoma was found in the liver in the shape of epithelial collections in connective-tissue alveoli. The thickened and infiltrated gut was carefully examined, and an abundant epithelial infiltration noted, and yet no distinctive arrangement commonly noticed in any form of carcinoma was found.

Case IV. *Scirrhous Carcinoma of the Stomach, etc.*—W. B. C., aged sixty-four, England, married, nurse. Gives no family history of carcinoma. Has been a chronic drinker; had syphilis thirty years ago; six years ago burned the whole upper part of his body, including face, with caustic potash; although it entered his mouth he feels sure that none entered his stomach. Was well up to May, 1877, when he commenced to suffer from indigestion and flatulence, which was soon followed by a choking sensation on swallowing, and vomiting; for ten or fifteen minutes afterward would have severe pain in his stomach and abdomen. Several weeks before he died had a profuse hæmorrhage from the bowels. From this time on

* Explained in this way: "The whole intestinal canal was studded with cancer tubercles, which accounts for the obstinate constipation during life by retarding the peristaltic action of the bowels." "London Pathological Society's Records," vol. xv., page 107, meeting of February 16, 1864.

his symptoms became more and more aggravated, and he died from exhaustion April 19, 1878.

Autopsy.—Twelve hours after death, body emaciated; right arm œdematous; peritoneal cavity filled with a dark, dirty-colored fluid containing pus. Surface of intestines covered in places with flakes of lymph. Parietal and visceral peritonæum injected. Costal cartilages calcified, a few pleuritic adhesions on the left side anteriorly, but no fluid. On right side, no adhesions, but an excessive amount of clear serous fluid. Heart: About ℥ ij of slightly brownish turbid fluid in the pericardial sac. Some calcification in the ascending aorta. Slight hypertrophy of the left ventricle, with fatty degeneration. Spleen: Weight about ℥ viij, the capsule thickened and colored with patches of old cicatricial tissue. Kidneys: The cortex of the left slightly thickened and fatty; right kidney normal. Infiltration of the cardiac end of the stomach; the orifice stenosed and nodular. Pancreas exhibited the same appearance; nodules also in the liver; its right extremity much enlarged.

Case V. *Scirrhous Carcinoma of the Colon.*—A. G. C., aged fifty, Norway, widow, laundress. No family history whatever obtained. General health has always been good. The patient's first trouble commenced some three months since, when she first noticed that her stools were small, not larger than a pipe stem; defæcation was accompanied by intense pain, bearing down in character, and tenesmus. Her stools gradually grew smaller until she could pass nothing at all. Her abdomen increased in size, measuring 41 inches. When she came to the hospital a large polypoid growth the size of an English walnut was seen to be hanging out of the anal orifice; enemas failed to bring away anything. She died July 15, 1873, of intestinal obstruction.

Pathological Report.—The lesion was confined to the colon about twenty inches above the anus. It had reduced the caliber of the gut so only to admit the passage of a small urethral bougie.

On further examination it was found that the thickening at this point was principally due to collections of enlarged glands at the mesenteric border of the intestines. The glands

were enveloped in dense fibrous tissue, and varied in size from a pea to an acorn.

Microscopic Examination.—The enlarged glands were invested with a firm, fibrous capsule, between the layers of which were collections of cells, most of them lymphoid in character, and arranged in rows; in the interior the normal tissue was supplanted by enormous collections of rounded cells, among which were numerous nests of larger cells; many of them had large and distended nuclei. There were from six to twenty in each nest. In the intestine proper the thickening was exceedingly moderate in amount, the walls of the gut not being increased in thickness to over one eighth of an inch. The new formations were mostly confined to the interspaces between the muscles.

Case VI. *Scirrhous Carcinoma of the Stomach.*—H. S., fifty-eight, single, farmer. No family history was obtained. The patient came to the hospital a few days before his death, suffering from gangrene of the left hand. He gave no symptoms of cancer, but at the autopsy a large ulcerating cancerous tumor was found in the greater curvature of the stomach. The pancreas was involved. He died October, 1877.

Pathological Report.—A preliminary microscopic examination gave evidences of encephaloid. Its origin appeared to be in the muscular coat. Subsequently it was found to have a preponderance of scirrhous material. In such cases it is not always certain what the variety of growth is, as parts may be encephaloid and parts scirrhus.

Case VII. *Scirrhous Carcinoma of the Stomach.*—V. A., forty-one, Germany, widower, baker. No family history of carcinoma was given. The patient's general health was good up to five months prior to death, when he commenced to vomit and belch up gas; at the same time diarrhœa set in. Everything he ate had a tendency to produce diarrhœa, and he had sharp, pricking pain in his abdomen. For several weeks before death fluid substances, looking like coffee-grounds, were vomited, and passed *per rectum*. Death June 16, 1876. At the autopsy carcinoma of the stomach was detected.

Case VIII. *Scirrhous Carcinoma of the Intestines, etc.*—A. D., forty-nine, Virginia, married, housewife. No family

history of carcinoma. General health of the patient good until eighteen months ago, when she began to have pain in her abdomen and vomiting; these symptoms passed off, to recur again and again. A short time since she was confined to her bed for five months. These attacks continued to increase, and she became jaundiced and rapidly emaciated. As there was great difficulty in evacuating her bowels, an attempt was made, in the hospital, to distend the large intestine with water, but only a small quantity could be forced in; ox-gall was then injected *per rectum*, but it failed to have the desired effect. She steadily sank, and died September 13, 1877, from the effects of the intestinal obstruction.

Autopsy.—The body was found much emaciated, and the color of the skin of a yellowish brown, much like that seen in Addison's disease. No tumor in the abdomen was made out by palpation. On opening the thoracic cavity the apex of the right lung was found adherent to the wall of the chest, and there were some adhesions along the axillary line. In the upper lobe of the same lung was a small cheesy nodule, and around it a circumscribed pneumonia. The apex of the left lung also was adherent to the thoracic wall, and there was a moderate amount of diaphragmatic pleurisy. The heart was small and contracted, and there was slight erosion of the aorta. The spleen was small. The kidneys appeared quite normal, except that they exhibited some suspicious points which had very much the appearance of tubercles. The liver was very small, weighing only two and a half pounds, and contained several deposits, some of which were as small as millet seeds. About four inches below the splenic curvature there was a notable displacement of the descending colon, and at that point, also, the intestine was firmly bound to the wall of the abdomen. From the curvature the gut descended in a normal manner for about four inches, then, turning upon itself, ascended one inch and a half, when it again turned at an acute angle, and passed downward. It was adherent to the abdominal parietes. The sigmoid flexure and rectum were normal. The constriction in the colon was so great at the point where the displacement had occurred that only the little finger could be passed through the flexed

portion, and it was with some difficulty that air could be forced through, and only after prolonged pressure. At the ileocæcal valve a tumor was also found. The ileum for a considerable distance above the valve was distended, its walls were very much thickened, and it was filled with fluid fecal matter which contained prune, date, orange, and grape seeds. There were in all twenty-three prune seeds. The mucous membrane, at this portion of the ileum, was extensively ulcerated. Neither Peyer's patches nor the solitary glands were particularly involved; but the ulcers had more the appearance of the tubercular variety, their long axis was transverse to the longitudinal axis of the intestines. In some instances the mucous membrane alone was affected, while in others nothing except the serous coat of the intestine remained. The tumor at the ileocæcal valve was about the size of an English walnut, and the caliber of the valve, although diminished, had not been encroached upon to such an extent but that the little finger could be pushed through it with some difficulty. The passage of foreign bodies like seeds would be attended, however, with great difficulty. On microscopical examination, the tumor was found to be unmistakably carcinomatous. The deposits in the liver were also carcinomatous. The mesenteric glands, in the neighborhood of the caput coli, were enlarged and infiltrated with the same kind of deposit.

Case IX. *Scirrhous Carcinoma of the Stomach.*—C. M., forty-four, German, butcher. No family history of cancer. Previous history good. The symptoms commenced a few weeks before death, with cramps after eating; also vomiting and constipation of the bowels. These symptoms persisted up to the time of his death, November 15, 1877. At the necropsy carcinoma of the pyloric portion of the stomach was found to exist.

Case X. *Scirrhous Carcinoma of the Duodenum, etc.*—J. L. B., aged seventy, United States, married. No family history of carcinoma. He has always been healthy until two or three months prior to his death. His first symptoms were the vomiting of coffee-grounds material, followed by pain in the abdomen, repeated attacks of vomiting of blood, and the passage of the same materials in his stools. He also suffered

from repeated fainting spells. He came to the hospital to be treated for stricture of the urethra. Death June 4, 1873.

Autopsy.—The lungs, heart, stomach, liver, pancreas, and duodenum were removed and examined by Dr. T. E. Satterthwaite. The heart was normal. The liver small, and weighed about two pounds, the left lobe being proportionately much smaller than the right. Both lobes were softened, so as to be almost pultaceous in consistence. Microscopical examination showed that the liver acini were pretty generally infiltrated with leucocytes, and in many places groups of fat-cells had taken their place. There was no increase of connective tissue in the organ. The gall-bladder was enlarged, measuring seven inches in length, and contained a gall-stone the size of a filbert. On pressing the gall-bladder no bile passed into the duodenum. The stoppage was found to be due to the narrowing of the ductus communis choledochus, and occlusion by a firm mass, of fibrous feel, which surrounded it and involved the head of the pancreas. A portion of this mass was removed, and proven to be carcinoma. The duodenum was so occluded that it barely admitted the end of the little finger. The stomach was very much dilated and the seat of chronic catarrhal gastritis. The pylorus was not involved. The kidneys were atrophied and contained cysts; the left containing twenty ounces of a clear serous fluid, but no urine (analysis by an apothecary). The cortical portion was diminished in proportion with the pyramidal. The capsule was adherent in places.

Microscopic Examination.—The tubes were filled with a granular epithelial débris. The intertubular tissue was pretty abundant. No other organs were examined.

Case XI. *Scirrhous Carcinoma of the Stomach, etc.*—K. G., aged fifty-five, Sweden, widow, milliner, no family history of carcinoma. The patient has been sick twenty-two months. Her "bowels" have been swollen for seven months, and she has been jaundiced for seven days. When admitted to hospital she was moribund, ascitic, and œdematous. She then complained of pains in the stomach. There was constant vomiting. Had taken but little nourishment for several weeks past, and had no passage from the bowels during the

last week; can not move in bed. Died May 22, 1877, having been in the hospital but thirty-six hours.

At the autopsy a scirrhous carcinoma of the pylorus was found.

Case XII. *Scirrhous Carcinoma of the Œsophagus.*—W. S., aged fifty-three, Delaware, widower, laborer, no family history of carcinoma. The patient's general health has been good; but he has been intemperate. The patient was well up to three months before death, when he began to lose flesh and strength, and soon had trouble in swallowing. There was no pain, however, except when œsophageal bougies were passed. No enlargement of the lymphatic glands was noticed. The patient gradually sank, and died October 22, 1874.

Pathological Report.—At the necropsy a cavity the size of a pigeon's egg was found in the lower lobe of the right lung, reaching to the surface of the diaphragm. The larynx was ulcerated, but no tubercles were noticed. The tumor in the œsophagus consisted of a mass of fungous matter, occupying the interior of the œsophagus. The surfaces of these growths were uneven and lobular, and had a general elevation above the surface of the mucous membrane of about three quarters of an inch. They occupied a space about four and a half inches long. On microscopic examination these growths appeared to arise from distinct centers, probably in the sub-mucous tissue, from which point they branched outward toward the interior of the tube, as could be seen by inspection with the naked eye. Microscopically, the tumor was made up principally of cells having an epithelial nature, packed closely together, and forming branching cylinders, which latter were often seen on cross section, and were round. The appearance thus presented was often like that of an acinous gland. The cellular bodies were large, some measuring $\frac{1}{1000}$ of an inch in their greatest diameter, and some even more. They contained large oval or irregularly quadrangular nuclei. When these cells were isolated their general form and shape corresponded with those found in the ordinary varieties of cancer, such as are seen elsewhere. It is true that when seen in position the cells arranged at the periphery looked as if they were cylindrical; but when they were separated it was rare to find them of that

character. The shape appears to depend in a great measure on the way in which they were crowded together. Toward the center of the cylinders the cells were not compressed as tightly together in many cases, so that they were removed during the process of preparation, making the resemblance they bore to acinous glands more striking. "There were some points, but only a few, where there appeared to be collections of cells nested together, which assumed the coloring matter very sparingly. Sometimes, too, there were one or two cells among the others which did not color, perhaps owing to their being old and horny. There were, however, none of the collections of cells, such as are seen in the epitheliomata of the lip, and especially of the vulva. The epithelioid masses were surrounded by a variable amount of the ordinary form of fibrillated connective tissue. The appearance would indicate, therefore, in my opinion, that we have to do with a carcinoma, such as is generally found in other situations."

In connection with this microscopic report it may be said that the authors of this monograph do not recognize any such thing as a cylindrical epithelioma. Such cases as have been thus described are believed to have been either the ordinary form of scirrhus or of epithelioma. Neither do they recognize any such growth as a cylindroma, an opinion which is gaining ground among pathologists.

Case XIII. *Scirrhous Carcinoma of the Bladder.*—J. C. F., fifty-two, New York, stone-cutter, married. Patient gave no family history of carcinoma, and had always been strong and healthy until the latter part of 1874. Then he had trouble in passing water, and micturition was very frequent, difficult, and accompanied with intense pain in the glans penis. On November 22, 1875, three small stones were removed from the bladder, the largest the size of a split pea. Bilateral lithotomy was performed December 15, 1875, revealing a fungous mass in the bladder. The pain still continued, and he sank rapidly, dying December 19, 1875.

The necropsy showed that there was a tumor of the bladder, situated on the left side. It was hard, about half an inch in height, ulcerated, and covered with a gritty deposit of lime salts, which had given to the exploring sound the impression

of a solid body. It was examined microscopically and declared to be a scirrhous carcinoma. The neighboring lymphatic glands were found affected.

Case I. *Epithelioma of the Floor of the Mouth.*—E. C., seventy, Ireland, widow. The patient states that, while in the country, about a year ago, a growth appeared in the floor of the mouth upon the left side. Her previous general health had been good, although she was a sufferer from dyspepsia when the growth first appeared. Her family, so far as known, had never suffered from cancer. Her friends and she thought smoking a pipe was the cause of the disease, and certainly no other injury had produced it. It gave but little pain. The lymphatic glands had not been enlarged at any time during the year of its growth. Various applications had been tried, but none had caused any arrest of the growth. It was regarded as an epithelioma, as it had the excoriated center and firm elevated tubercular margin. Such was the diagnosis made at a clinical lecture in the College of Physicians and Surgeons.

Case II. *Epithelioma of the floor of the Mouth.*—L. F., sixty-seven, Scotland, married, shoemaker. No family history of carcinoma. General health has always been good. The tumor was first noticed November, 1875, under the tongue, near the frænum, and the only ascribable cause was smoking. The growth was very small when first noticed, and lay close to the jaw; was painless up to July, 1876, two months before operation. During these two months there had been pain, shooting in character, extending from the tumor through the left side of the face, and up to the ear. Patient had been an inveterate smoker, and the end of his pipe rested against this part. The growth was removed, September, 1876; but it returned and he died of exhaustion in June, 1877.

Case III. *Epithelioma of the Lower Lip.*—H. C., seventy-two, Germany, widower, silver-plater. The patient knew of no family history of carcinoma. His general health had always been good. In November, 1877, the growth first appeared as a small wart-like excrescence on the lower lip, one half of an inch from the right angle of the mouth. The

only cause assigned was smoking a pipe. Six months later it began to grow more rapidly, and extended to the upper lip, spreading inside the right cheek. At first it was accompanied by little or no pain; later it gave him much uneasiness and acute pain. Ulceration set in one month before the operation, November 14, 1878, when the growth was removed. No return of growth up to date (January, 1879).

Pathological Report.—The morbid growth was found to be composed of a large amount of granular *débris*, while here and there collections of distinct epithelial corpuscles, with bright nuclei, were seen, and at one or two points distinct nesting of the epithelial elements. It was therefore classed as an epithelioma.

Case IV. *Epithelioma of the Lower Lip.*—L. O'N., sixty-five, Ireland, married, varnisher. No family history given. General health had always been good. In April, 1875, he first noticed a growth on the lower lip, at a point where he had always rested his pipe. The growth was removed by a V-shaped incision, two pin sutures were put in, and, in addition, several fine silk ones. The subsequent history of this case is unknown, as the patient passed from observation, and his whereabouts could not be ascertained. The operation was performed April 24, 1876.

Case V. *Epithelioma of the Eyelid.*—A. C., sixty-eight, Ireland, widow, housekeeper. No family history of carcinoma. General health had always been good. The growth was first noticed April, 1865, upon the upper eyelid, producing intense pain. No assigned cause. The application of the terchloride of antimony and other caustics was resorted to. The growth was four times removed, each time partially allaying the pain, but it regularly returned, and was accompanied by severe pain in the eyelid and surrounding parts. She died from exhaustion, February 7, 1878.

Case VI. *Epithelioma of the Forehead.*—L. G., sixty-one, single, Ireland, housewife. No family history of carcinoma. General health has always been good. The growth commenced in March, 1864, as a wart along the edge of the hair, on the left side of the forehead. It produced but little, if any, pain. A physician burned it out with caustics several times,

and it was cut out twice; first, March 4, 1877, and again in September of the same year. The wound never healed after the last removal.

Pathological Report.—Microscopic examination showed nested epithelial bodies.

The disease is now (January, 1869) spreading, and has become a frightful ulcer, which appears to have invaded the frontal bones.

Case VII. *Epithelioma of the Tongue.*—M. McD., thirty-two, England, married, housewife. An aunt died of carcinoma. The patient's general health was never very good. In January, 1877, she first noticed an ulcer on the tongue, opposite a decayed tooth (the ascribed cause); it gradually extended and invaded a large part of the tongue and floor of the mouth, and was accompanied by severe neuralgic pain in the side of the face and ear (explained by the implication of the filaments of the sub-maxillary and otic ganglions). At the time of the operation, June 25, 1878, the patient was in poor health, much debilitated, and supposed to be suffering from phthisis. The operation proved a success; the pain was relieved, but the patient died July 27, 1878, of supposed phthisis.

Pathological Report.—The growth was examined by Drs. Satterthwaite and Shrady, and pronounced to be an epithelioma, from the characteristic nesting of the epithelial elements which stamps these growths.

Case VIII. *Epithelioma of the Pharynx.*—A. M., thirty-nine, merchant. The patient's father died of carcinoma of the tongue. General previous health good, although he had suffered from syphilis, and "sore mouth." In April, 1871, an ulcer appeared upon the palate, and the adjacent parts were nodular and angry. He had trouble in opening his mouth, and in mastication. Under iodide of potassium the local condition would improve for a time, but then grow worse when treatment was suspended. The disease, however, steadily gained ground. In December, 1873, the submaxillary glands became enlarged, and a portion of the ulcerated growth which protruded between the teeth was cut off. The diagnosis of epithelioma was made from an examination of this

piece. He gradually sank, and died from exhaustion April 27, 1874.

The Pathological Report was as follows: The specimen was taken from the most dependent part, and was removed by the snare. In consistence it was only moderately firm, not hard or cartilaginous to the feel; epithelial "worms" could be squeezed out by pressure. It was subjected to the usual mode of preparation, being allowed to remain in a weak solution of bichromate of potassium about twenty-four hours, after which it was preserved in ordinary alcohol a number of days. Sections were made in various directions. Laterally, the growth was found to be covered by mucous membrane, in which the cell elements were considerably increased both in number and size. Internally, the stroma was made up largely of rounded or spindled-shaped cells, with a varying amount of connective tissue. In many places there was an appearance of gland structure, in which the epithelial cells were larger and more numerous than usual. In several specimens no epithelial globes could be found, in others they occurred at some intervals; many of these were extremely small, but could be recognized from the fact that they did not stain with carmine. In no case were they of a yellow color.

Case IX. *Epithelioma of the Rectum.*—M. D., forty-two, Ireland, single. No family history given. General health good. In September, 1877, his present disease commenced. He then found himself unusually "windy," the faeces became very hard, and he suffered considerable pain while straining at stool. Later he began to bleed from the rectum, and, four months after, a tumor was detected in the rectum; this bleeding generally occurred with every passage. The growth was several times cauterized with nitric acid and acid nitrate of mercury, under ether, giving temporary relief. The rectum was then extirpated by Dr. L. A. Stimson, July 11, 1878. The pain was relieved by the operation, but the growth returned at the end of two months, and the patient died from exhaustion January 9, 1879.

Pathological Report.—The growth was examined by Drs. Satterthwaite and Stimson, and found to be an epithelioma.

Case X. *Epithelioma of the Lower Lip.*—W. E., sixty-

eight, Ireland, married, baker. No family history of carcinoma; general health good. In June, 1871, the patient first noticed a small crack or cleft in the lower lip, at the point where his pipe commonly rested. He thought nothing of it, but continued smoking until a small elevation developed there. A year and a half subsequently, it was burned out with caustic, and still again nine months later. Finally, the growth was removed by the knife, June 4, 1874, the patient suffering at the time from hemiplegia. The subsequent history of this case we have not been able to obtain.

Case XI. *Epithelioma of the Nose.*—E. M., thirty-three, Germany, married, baker. No family history of carcinoma. The patient's general health always good. In December, 1875, he suffered from a very severe attack of varioloid. Three weeks later a pimple appeared on the left side of his nose; it grew quite rapidly, but produced little pain. Removal April 27, 1876. No return up to date (January, 1879). No history of injury or cancerous diathesis.

Pathological Report.—"Distinct nesting of the epithelial elements characteristic of epithelioma was found."

Case XII. *Epithelioma of the Lower Lip.*—J. C., aged fifty-two, contractor. No family history of carcinoma, and the patient's general health has always been excellent. In May, 1878, the growth first appeared on the left side of the lower lip, as a little hard lump, which spread without breaking, and gave but little pain. He used sugar of lead and glycerine without advantage. He was accustomed to chew a tooth-pick (the assigned cause). No operation other than the application of terchloride of antimony; this relieved the pain, and the ulcer disappeared in August, 1878, remaining away until December, 1878, when, from accounts that were received, it was thought to be returning.

Pathological Report.—Microscopic examination revealed nothing distinctive of epithelial carcinoma. This fact, however, does not militate against the idea that the disease was not epithelioma, as in the early stages no microscopic evidences may be found, a point that has been previously noted.

Case XIII. *Epithelioma of the Tongue.*—A. D., aged forty, Canada, widower, slater. No family history of carci-

noma. The patient's general health has been good, but he has suffered with syphilis for the past twenty years; and has also been a hard drinker. He has smoked moderately, but has chewed a great deal. In September, 1877, the pain commenced. Three months later (or in December, 1877), he noticed a tumor on the right side of his tongue, close to the floor of the mouth, opposite the second molar tooth. He was leeched at this point, and a poultice applied to the side of the face; the tumor was also cauterized, giving some transient relief. This operation was repeatedly done, but still it constantly grew larger. He was then placed under the full anti-syphilitic treatment, and the ulcer at the same time cauterized, but to no purpose. The full influence of arsenic (Fowler's solution) was also tried; this failing, the growth was pronounced an epithelioma, and operative interference was resorted to March 27, 1878. Two months later, the growth probably recurred in the lungs. The patient died June 6, 1878. There was no mechanical injury to account for the growth.

Pathological Report. — The tumor removed from the tongue was examined by Drs. Satterthwaite and Stimson, and pronounced to be an epithelioma.

Case XIV. *Epithelioma of the Lip.*—M. McC., sixty, Ireland. The growth has existed on the lip since 1865, as a little hard lump or wart. Then, in 1875, a scale came off it, but the wart remained, and since then has been increasing. Treatment, terchloride of antimony, the disease returning in three or four months.

Case XV. *Epithelioma of the Glans Penis.*—G. M. C., sixty-one, New York, married, attorney. The patient's father had carcinoma of the penis. His general health has been good, though he has been an opium-eater. The growth commenced in August, 1877, as a small pimple, gradually grew until the whole glans was involved, producing severe pain. It was cauterized with nitrate of silver, and calomel dusted on, but without relief. The penis was amputated April 18, 1878, at which time he was suffering from stricture of the urethra and hæmorrhoids. No return of the growth up to date (January, 1879). No involvement of lymphatic glands.

Pathological Report.—Microscopic examination showed concentric rings, or distinct nests of epithelial corpuscles characteristic of epithelioma.

Case XVI. *Epithelioma of the Lip.*—J. S., aged sixty, Ireland, married, laborer. No family history of carcinoma. The patient's general health is said to have been good. He has been an excessive smoker. In April, 1875, a small pimple first appeared on the lower lip, increasing steadily during the year, becoming a small tumor, which gave him no pain. It was removed April 14, 1876.

Pathological Report.—Microscopically, nested cells formed as usual in the epidermis, and also in the lymphatic glands. No subsequent history of the case could be obtained.

Case XVII. *Epithelioma of the Penis.*—P. M., aged sixty-one, Ireland, laborer. No family history of carcinoma. The patient's general health has always been excellent. The growth is said by the patient to have first presented in the glans penis forty years before (or April, 1837), as a small pimple, but it did not give trouble until May, 1876, when it began to grow. The inguinal glands were immensely enlarged on both sides when the patient was first examined. The penis was amputated May 18, 1877, and the pain was relieved. Disease did not return in the stump, but the inguinal glands continued to enlarge very rapidly, and the patient died from exhaustion and repeated hæmorrhages November 3, 1877.

Pathological Report.—Microscopic examination as above, confirming the diagnosis. This seems to be an interesting case, showing how warts upon a part may continue benign for many years and then at once assume a malignant character. This fact has often been observed on the face, as we have had occasion to state in the early part of this article.

Case XVIII. *Epithelioma of the Larynx.*—A. C., aged thirty-one, Prussia, married, jeweler. No family history of carcinoma. The patient's general health was good up to April, 1875, when the growth first appeared in the larynx. As a cause, the use of a blow-pipe for soldering chain links is assigned. It produced a constant dull pain, which was occasionally aggravated by sharp paroxysms. In October

and November, 1876, the growth was removed with Mackenzie's forceps.

Pathological Report.—The small specimen subjected to examination showed that the superficial layer of the epidermis was largely increased in amount, and contained nested cells of an epithelial character.

Case XIX.—*Epithelioma of the Lower Lip.*—T. S., aged fifty-six, Ireland, laborer. No family history of carcinoma. The patient's general health has been excellent. The growth commenced in July, 1877, on the lower lip, where he was in the habit of holding his pipe. When seen it appeared to be an oval ulcer, one inch by one and a quarter in diameter. The growth was removed January, 1878, by an elliptical incision, and the pain was relieved. It had not returned in November, 1878.

Pathological Report.—Microscopical examination confirmed the above diagnosis.

Case XX. *Epithelioma of the Tongue.*—A. B., aged fifty, England, married, barber. No family history of carcinoma. Five years ago a small ulcer was first noticed on the right side of the tongue, where his pipe always rested when smoking. This ulcer slowly increased in size for three or four years, gave great pain, was repeatedly cauterized, each time leaving the ulcer a little larger, and finally involved the anterior and dorsal surface of the tongue. The knife and cautery were used together. It was removed July, 1872. The pain was not diminished, but became more intense, the disease returning in the same place. The patient died September 2, 1872. At the necropsy an abscess of the lung was found, and enlargement of the bronchial glands.

Pathological Report.—The tumor externally appeared to be nothing more nor less than an hypertrophied papilloma, but, internally, characteristic epithelial globes in nests were found.

Case XXI. *Epithelioma of the Ear.*—J. McC., aged forty-three, Ireland, coachman. No family history of carcinoma. The patient's general health vigorous. In February, 1874, the ear was first frost-bitten, and became ulcerated and thickened. All sorts of quack applications were resorted to. When seen, the ulcerating mass was covered with scabs. After re-

moval of the same it was certain that the cartilaginous framework under them was completely destroyed. The edges of the ulcers were red, nodular, and granulating. After operation, September 15, 1874, primary union of the cut edges followed, except at one point, where probably some of the growth was left. In the course of a few days, quite a large ulceration had formed. The growth, it would seem, was not completely removed, or else it returned immediately; it has progressed more rapidly, and is still growing (January, 1879).

Pathological Report.—Microscopically, nested cells were observed, and an enormous increase of the epithelial elements.

Case XXII. *Melanotic Epithelioma of the Cornea.*—W. L. A., aged forty-eight, merchant. No family history of carcinoma or injury. The patient's general health has always been excellent. The growth began five years ago (or October, 1873), and was preceded by a black spot, which began nineteen years ago. It first occurred in the margin of the left cornea near the limbus. The patient's health at the time of the outbreak was perfectly good. It produced no pain, but there was watering of the left eye. It was removed by Dr. Henry D. Noyes, October 5, 1878. The eyeball was left intact, and the diseased growth merely scraped off. Eyesight was unaffected, and the patient returned shortly after the operation to the country, seeing perfectly. In this case the recognition of the nature of the disease by the microscope saved the patient from a terrible operation (extirpation of the globe), which had been planned under the impression that the disease was a melanotic sarcoma. Should such an operation ever be necessary, the patient will have been granted immunity for many months, and perhaps years. No return up to date (January, 1879).

Pathological Report.—Microscopic examination by Drs. Bull and Satterthwaite showed the growth to be a melanotic epithelioma.

Case XXIII. *Epithelioma of the Nose.*—W. C., aged forty-six, Ireland, laborer. No family history of carcinoma or injury. The patient's general health has always been good. The growth was first noticed on the nose in July, 1875, and was removed in January, 1876. It gave no pain. After some

four months there was a recurrence in the floor of the mouth; growth was slow, but now (or December, 1878) the sub-maxillary glands are enlarged. (January, 1879).

Case XXIV. *Epithelioma of the Middle Ear and Meninges.*—Mrs. M'C., aged twenty-seven, married, housewife. No family history of carcinoma or of injury. The patient's general health had been very good, though there had been a discharge from the ear for three years previous to November, 1876, having the history of chronic suppuration (otitis media). On examination a perforated drum membrane with hard fibrous granulations projecting through the opening was found. No symptoms of mastoid trouble. Treatment was adopted without success. On March 8, 1877, a free incision was made over the mastoid, although the usual mastoid symptoms were absent. Extensive necrosis of the bone, however, was found, and the probe passed readily into a large cavity in the bone. On May 24, 1877, a more extensive incision was made, and more dead bone removed. Death, July, 1877. The autopsy was made by J. C. Shaw, M. D., and the report is to be found in the transactions of the American Otological Society, July 24, 1878. Dura mater extensively involved.

Report of the Case by Dr. J. C. Shaw, of Brooklyn. Epithelioma of the Brain.—Dr. Mathewson presented a specimen taken from the left ear of a female twenty-eight years of age. Last fall she had otorrhœa, but no marked symptoms of mastoid trouble. On cutting down upon the mastoid process, however, considerable dead bone was met with. The patient complained of severe pain and pressure about the head. The cut was kept open and discharged freely. She died of exhaustion last July, and did not present any well-marked cerebral symptoms. There was no paralysis or loss of memory. On *post mortem* examination, a tumor was found extending up under the dura mater within the cranial cavity, pressing into the middle lobe of the brain. The tumor grew from the tympanic cavity through the petrosal foramen.

The growth, of which a section was made by Dr. Shaw, appears to be one of epithelioma, as in it, upon both sides of the dura mater, are the epithelial nests or globes found so frequently in epithelial carcinoma of the vulva and lip. In one in-

stance, the epidermic balls are in the act of falling to pieces, and the distinct elements of which the ball is made are shown. They do not color with carmine or logwood, and are of tough, corneous consistence. These characteristics belong to epithelioma, and indeed in our experience when you find them you may be sure or almost sure you have carcinoma. Instances of this kind are exceedingly rare, in fact we hardly expect that there can be such a thing as an epitheliomatous growth from the dura mater which, as a serous membrane, is not covered with epithelium. It would to some be natural to suppose that it was an extension of the disease from the middle ear; in fact the history points in that direction. Instances are mentioned by Delafield of epithelial carcinoma of the dura mater, but no mention is made of its origin. Paget says, in rare instances it may arise from the dura mater. But we have not been able to find any instance where it was clear that it originated there and nowhere else. In this case, the clinical history of the case began with the middle ear; the trouble went on to perforation of the mastoid process, with subsequent separation of diseased bone. Professor Schwartze,* of Halle, however, has published a well-marked case, where a man of fifty-five came under his notice with great pain in the left side of his face and ear; he had scarlatina in early life, and since that time had suffered from intermitting troubles. Previous to this he had hæmorrhages. Relief was had by operations and the removal of carious bone, but the hæmorrhage returned again. Later the glands about the neck were involved, the alveolar process of the lower jaw, and the zygoma. There was fresh pachymeningitis, by which the brain was adherent in its middle lobe to the skull. The petrosal portion of the dura was thickened. Death takes place usually one year after the commencement of the flow from the ear.

Case XXV. *Epithelioma of the Lower Lip.*—N. B., forty-four, Switzerland, married, laborer. No family history of carcinoma. The patient's general health has always been good. In March, 1874, he first noticed a small pimple on his lower lip, which gradually grew larger until it was about the size of a

* "Archiv. f. Ohrenh.," Bd. ix., p. 208, 1875.

marble. Ascribed to holding his pipe at that point. He went to a dispensary, where it was removed. Shortly after this, he noticed another pimple on the side of his neck, which rapidly increased to the size of an orange, and was as hard as a stone; after poulticing for two days it broke and discharged white matter, which changed to a bluish color with a putrid odor. After this a salve was applied. On June 17, 1875, the whole growth was removed with the knife, and the wound thoroughly cauterized. Cautery applied June 25, July 10 and 26, August 9, 1875. He died October 24, 1875, from exhaustion and a return of the growth.

Pathological Report.—The growth was examined repeatedly, but each time it seemed impossible to define its character exactly. The examination on July 27 of the present year indicated epithelial carcinoma, rather than anything else.

Case XXVI. *Epithelioma of the Cheek.*—S. L., sixty-two, New York, married, book agent. No family history of carcinoma. The patient's general health is good. In December, 1876, he first noticed a growth at the corner of the mouth. He had smoked a pipe, but did not let the pressure bear on one side more than the other. It produced no particular pain. The growth was removed by Dr. Sabine, December, 1877, then in September, October, and December, 1878. It returned in the cheek, and the last growth seemed to be slower than the primary.

Pathological Report.—The growth was found microscopically to be composed of masses of epithelial elements, surrounded by extravasations of blood, and infiltrated throughout by numerous small round corpuscles, probably lymphoid in character. In many points, a partial nesting of the epithelial cells was seen, while at others were perfect nests, characteristic of epithelioma. The epithelial corpuscles showed the prickles (prickle cells) very distinctly.

Case XXVII. *Epithelioma of the Mouth.*—J. Y. D., sixty-five, New York, married, farmer. One sister died of carcinoma of the breast. The patient's general health has always been good. In October, 1876, he first noticed a tumor on the inside of his cheek (smoked a clay pipe). Six months before it was removed, some caustic was first applied a few times. The

pain accompanying it was of a dull character, and located in the ear of that side. The growth was removed by Dr. Dumond, April, 1877. The pain was relieved by the operation, but the disease returned in the same place within three months, and grew more rapidly. He died October, 1877, from a return of the growth and exhaustion.

Pathological Report.—The ordinary appearances of epithelioma were seen.

Case XXVIII. *Epithelioma of the Lower Lip.*—J. L., forty, United States, married, laborer. Has a family history of epithelial carcinoma. The patient's general health has always been good. The growth commenced in June, 1875, in the middle of the lower lip. It was ascribed to smoking a pipe, produced no pain, and was first removed June 12, 1877. The return was immediate; it was again removed May 4, 1878, and has again returned (January, 1879). It was, in fact, at first nothing but a papilloma; returning, it presented the characteristics of epithelial carcinoma.

Case XXIX. *Epithelioma of the Labia.*—S. B., aged sixty-seven, New York, widow. No family history obtained. The patient's previous health had been good. In November, 1875, the present trouble began, with painful and frequent micturition, followed by a tumor in the labium, which soon became so painful that she could not sleep. Six months after its appearance (June, 1876) the growth ulcerated and bled freely; in October, 1876, the opposite labium became involved. Operation December 18, 1876. The pain was relieved, but she died in August, 1877.

Pathological Report.—The cut surface was white, glistening and firm, but not tough. On squeezing the growth, little plugs exuded from the surface; these were found to be composed of the following variety of corpuscles, viz., long and fusiform, with oval central bodies twice to three times the size of a lymphoid corpuscle; epithelial corpuscles, both large and small, and angular, containing one or more large central bodies; ovoid corpuscles with a single nucleus; besides which were numerous groups of epithelial bodies closely packed together.

Case XXX. *Epithelioma of the Cheek.*—A. B., aged fifty-

six, United States, widower, druggist. No family history of carcinoma. Previous health of patient good. Eight years ago (May, 1869) the patient applied some creosote to the left cheek; it caused smarting and ulceration. Nine months ago (February, 1877) a pimple appeared at the place on the cheek where the creosote was applied. It was very painful, chiefly at night. The growth was removed November 21, 1877. The pain was relieved, but there was a return of the growth, which was again removed May 5, 1878, and again returning was removed August 15, 1878. The subsequent history is unknown (after September, 1878).

Pathological Report.—This is another case showing the tendency of papillary growths to develop into carcinoma. The growth when first removed presented no evidences of carcinoma, but those common to papillomata, while in all the other portions removed distinct evidence of carcinoma was observed.

Case XXXI. *Epithelioma of the Tongue and Larynx.*—M. G., aged forty-one, France, single. He had one sister die of phthisis, but he did not know that there had been any carcinoma in the family. The disease produced severe pain. The tumor was removed, but returned (date unknown). The patient died in January, 1876. It was supposed that the cause of his death was consumption.

Pathological Report.—Microscopic examination showed that the disease was epithelioma.

Case XXXII. *Epithelioma of the Labium.*—Mrs. C., aged sixty-three, United States, housewife. No family history of carcinoma. The patient's general health has always been good. The growth first appeared on one labium, producing some pain. Several caustic applications were used, but it was finally removed August, 1872. She died January, 1873.

Pathological Report.—Microscopically the growth presented distinctive characteristics of epithelioma.

Case XXXIII. *Epithelioma of the Lower Lip.*—D. B., aged sixty, Ireland, single, carpenter. Family history of phthisis. The patient's previous health has been good. A tumor was first noticed on the left side of the lower lip in January, 1870. It produced no pain, but at times itched

terribly. The growth was removed January, 1871. Returning some time after on the nose, it occurred as a little scab, which grew slower than the first growth. Second removal, January 14, 1874. No return to date (January, 1879).

Case XXXIV. *Epithelioma of the Face.*—E. S. B., aged seventy-two, Ireland, widow, housewife. The patient stated that her previous health had been good. The growths first appeared in the face. They did not come from an injury, and there had been no cancer in the family. There was, in fact, no cause assigned for them. They produced no pain, and there was enlargement of lymphatic glands. In August, 1878, warts were removed by cautery, viz., terchloride of antimony. In October, 1878, they returned. The disease was regarded as "epithelial warts," and has not returned to date (January, 1879).

These growths, though not examined microscopically, as they were entirely destroyed by the caustic, were regarded from their physical characters as the epithelial warts that are so commonly the source of epithelioma.

Case XXXV. *Carcinoma* (*Epithelial*) *of the Lower Jaw.*—J. H., aged sixty-five, married, clerk. The history of this case is defective, owing to deficiency in the hospital records. After removal, it reoccurred, and the patient died August, 1878.

Case XXXVI. *Epithelioma of the Penis.*—B., fifty-two, United States, married, merchant. The patient, whose family history was free from carcinoma, and whose general health had been good, first noticed a painless wart on his penis in February, 1871. It was removed during this year, and the lymphatic glands in the penis were not involved. It returned, however, in the cicatrix, during the same year, but grew less rapidly than at first. The tumor was removed again, by Dr. R. W. Taylor, March, 1877, by amputation of the penis, since then it has not returned anywhere (January, 1879).

Case XXXVII. *Epithelioma of the Œsophagus.*—J. G., sixty-three, Canada, married, cooper. No family history of carcinoma. General health good, but always a hard drinker. His first symptoms commenced about January, 1878, with an inability to keep anything on his stomach; and

symptoms principally referable to the pyloric region of the stomach; yet no tumor could be made out in that locality. Œsophageal bougies were, on several occasions, passed, as it was supposed, into the stomach; and at one time it was thought that a slight stricture was detected. He was constantly and almost exclusively nourished *per rectum*, for a dilated stomach with pyloric disease was supposed to exist. His principal symptoms were vomiting, with pain at the pylorus, and increasing weakness. After a few weeks he complained of feeling a lump in his throat, which caused him great pain. Thoracic aneurism was suspected, but no physical evidence was obtained. He also had a very severe attack of cystitis, which yielded in ten days to treatment. He was kept alive for five months by rectal alimentation. He died July 3, 1878, from gangrene of the lungs, chronic bronchitis, and exhaustion.

Pathological Report.—The induration surrounding the lower portion of the œsophagus, producing a tight stricture, was examined microscopically, and found to be composed of epithelial elements arranged in distinct nests characteristic of epithelioma.

Case I. *Medullary Carcinoma of the Breast.*—A. M. R., fifty-five, widow, nurse. No family history of carcinoma. The patient's general health had always been good prior to February, 1874, when she noticed a lump under the nipple of the left breast. It gave her some pain, and she became exceedingly weak. Amputation of the breast, March 4, 1874. She regained her former good health, however, and as yet there has been no return (January, 1879).

Pathological Report.—Collections of large epithelial cells, with large, distinct, mostly ovoidal nuclei; the cells are packed together closely in nests, and are surrounded by an extremely delicate connective tissue. There are many vessels in the tumor, and in places large collections of lymphoid cells. The gland ducts are mostly shrunken. The cells are not always easily recognized, and in some there are cheesy contents. The appearances are such as are seen in medullary carcinoma, and an early return would seem probable. This case is exceedingly interesting, for the reason, first, that the

growth, though histologically of the most malignant character, was removed three months after its first appearance, the patient regaining afterward her former good health, and since then has had no recurrence. The following letter has been received from her (January, 1879).

"My general health was always good up to the time of my first feeling a lump under the nipple of the left breast. I did not suffer much. It was removed five years ago . . . . I have been enjoying good health ever since. Had it removed after three months of weakness and suffering. No tumors have returned since."

Case II. *Medullary Carcinoma of the Kidney—Chronic Diffuse Nephritis.*—S. W., eighty-three, New York, single, retired merchant. The patient has no family history of carcinoma, and his general health had been good. When quite young he suffered severely from an injury to the spine. In later years had calculi in the kidney (found on autopsy). The disease was first noticed at the autopsy, when a small, soft, whitish nodule, size of a cherry, was found. Died March, 1878. Autopsy March 21, 1878.

Pathological Report.—Examination of kidneys (right or left unknown) disclosed a small nodule, the size of a cherry; soft, elastic, and lighter in color than the rest of the tissues, and inclosed in a single capsule. Microscopically it consisted of epithelioid corpuscles, embraced in acini, and was certainly medullary carcinoma. Examination of the other kidney showed that the epithelium lining the larger collecting tubes was markedly granular in places, while the tubes themselves were often bare; there was also an increase in the amount of the interstitial connective tissue. The cortex was granular, and the pelvis dilated. There were in the kidney several cysts.

Case III. *Medullary Carcinoma of the Breast.*—M. J. T., aged forty-seven, Bermuda, single. Family history free from carcinoma. Her previous history good. In May, 1869, she first noticed a tumor in the lower edge of her left breast, which gradually increased in size; most rapidly, however, during the last year. In October, 1873, the swelling opened just below the nipple and discharged some matter, and now became

painful. General condition good and secretions normal. The growth was removed January, 1874. The pathological report says: "The tumor is soft and incloses a small cyst. Several small collections of cheesy matter are found in the center." "Microscopic appearance: It consists of large epithelial cells with well-marked nuclei; they occur mostly in large alveoli, and are surrounded by a moderate amount of connective tissue; the connective tissue is filled with nuclei and the cells are very large, resembling encephaloid."

Case IV. *Medullary Carcinoma of the Vagina.*—L. S. M., aged twenty-five, United States, married at twenty-one, no family history of carcinoma. The patient's general health was good up to twenty months ago. At this time she had an abortion, the only assigned cause for the present trouble. Since that time she has never felt well. The growth is in the posterior wall of the vagina, one inch by one and a half inch in diameter, and raised one sixteenth to one tenth of an inch above the mucous membrane; is readily broken down and bleeds freely; looks like a flattened raspberry. The growth was painted with a strong solution of the sesquichloride of iron. Tonics were administered also. Chlorate of potassium and alum injections ordered. The growth entirely disappeared, leaving a granulating ulcer, which never entirely healed, but spread, invading the uterus and rectum. Hæmorrhage was the immediate cause of the patient's death, October 10, 1875.

Pathological Report.—About the whole of the left lateral wall of the vagina has been destroyed by a corroding ulcer which has extended up to the cervix uteri, excavating a portion of its left side. Inferiorly the ulcer has eaten through into the rectum, the connective tissue to the left of the ulcer is much thickened, and the seat of nodules from the size of a pea to a small marble; some of them have undergone degeneration, and have become cysts containing large epithelial corpuscles, fatty matter, and granules; the firmer nodules consisted of large epithelial corpuscles packed away between the connective-tissue bundles.

Case I. *Colloid Carcinoma of the Breast.*—A. S., aged forty-one, married; no family or previous history of carcinoma. In December, 1872, the patient first noticed a small

tumor under her right breast; has always been painless. The growth gradually increased, and the nipple became retracted; it was freely movable. There were also several small cysts on the surface, and the skin covering it was thinned. The surrounding glands were not involved.

The breast was amputated March 21, 1873, and the tumor has not returned up to date, January, 1879.

Pathological Report.—"Microscopic examination shows that the firmer portion is made up, for the most part, of epithelial cells, large and polygonal or rounded, having from one to three large nuclei, which stain deeply with carmine; they are grouped together in alveoli. In some portions are found spaces which are mostly filled with a granular *débris;* in one I saw several epithelial cells surrounded by the granular *débris.* (It is not necessary to find the concentric laminæ mentioned by Rindfleisch, to be able to diagnosticate colloid cancer.) The semifluid matter consists of granular matter and epithelial cells undergoing degeneration."

Case II. *Colloid Carcinoma of the Rectum.*—J. H., Ireland, aged fifty, married, porter. A cousin of the patient died of epithelial carcinoma of the tongue. The patient's previous health had been good. In May, 1864, he had an operation for *fistula in ano.* One year later (or May, 1865) he noticed a tumor just within the anal orifice, which has gradually increased up to date. The growth at the time of operation involved the left lateral and posterior wall of the rectum, extending three inches above the anal orifice. The growth was removed May 27, 1878; the patient sank rapidly and died soon after (June 1, 1878).

Pathological Report.—Microscopic examination showed the growth to be colloid. At the necropsy the kidneys were found to be cystic and atrophied, and the right elbow-joint contained pus.

Case I. *Cauliflower Growth of the Uterus.*—J. W., aged thirty-three, U. S., married, school-teacher. No family history of carcinoma. The patient's previous health has always been good. Her symptoms commenced in November, 1873, and were as follows: First she had severe pain in the back and pelvis, with increasing dysmenorrhœa at each menstrual epoch;

later she had pain in passing water; then a leucorrhœal discharge set in, which became very dark in color and offensive. On April 13th, a growth involving the cervix uteri was found to exist, and the actual cautery was applied April 16, 1874; the pain was modified by the operation, but the growth steadily progressed. It was repeatedly cauterized from April to August, with no permanently good result. The patient gradually sank, and died March, 1876, from an extension of the growth.

Pathological Report (*condensed*). — Epithelial papillary carcinoma of the cervix uteri. There were two tumors sent for examination, one about the size of a pullet's egg, the other of a small orange and rather flattened. They had a distinct villous appearance, and on examination proved to be branching villi covered with flat cells in several layers. The villi possessed stalks of great length, and contained a large amount of fibrillated connective tissue, lymphoid cells and vessels. I recognized no epithelial globes, nor anything further than that diagnostic of carcinoma. [S.]

It is evident that they occur in connection with carcinoma and therefore indicate its presence, though it is probable that in many cases they are simply papillomatous, cauliflower excrescences, and the disease itself is in the deeper tissue.

This case is extremely interesting from a microscopical point of view, for often, as has been previously stated, portions of these papillary growths are sent for examination, and it impossible to find in them any of the evidences of carcinoma in the sense in which it is commonly received; in all probability, had the whole growth been obtained, the evidences would have been undoubted.

Case II. *Cauliflower Growth of the Uterus.* — C. E. H., aged forty-eight, New York, single, school-teacher. No family history of carcinoma. General health good. Four years ago (July, 1872), while reaching up to do some work just after menstruation, she was taken with profuse flooding, which became so excessive that she had to give up work. The flooding continued for eighteen months, when she recovered, and for a time menstruated regularly, but shortly after took a long journey, which resulted in a return of the flooding in a more aggravated form. On March 1, 1876, she was examined, and

a tumor of the cervix uteri found and removed, which was about the size of an egg. This, for a short time, gave partial relief. On April 3, 1876, the uterus was scraped out, and a spongy mass taken from its walls. On September 20, 1876, numerous cauliflower growths were removed. Death, November, 1877.

Pathological Report.—The appearances seen were those of large vessels, arteries and veins, with dilated caliber and delicate walls, filled with blood corpuscles. There were also blood spaces, communicating with the blood-vessels, and they also were studded with blood corpuscles, mostly of the red variety. A few trabeculæ of fibrous tissue penetrated the tissue in various directions. "From the appearances noted in this case, the specimen is one of cancerous tumor."

The second specimen showed a large number of epithelial elements, but their exact nature was difficult to define. "If the first specimen represents the growth fairly, its character is clear; it may, however, be only the vascular portion of a malignant tumor." It seems from these two reports that the microscopical examination was not thoroughly satisfactory; the clinical history seems to show that it was cauliflower growth. [S.]

Case I. *Carcinoma of the Rectum* (unclassified).—J. B., aged fifty one. No family history of carcinoma, but one of phthisis. The patient's general health was good. Nine years ago he had hæmorrhoids. Two months since he discovered a tumor just within the anal orifice, the size of a hen's egg. It was removed May 12, 1876. For a time he had no further trouble. Lumbo-colotomy was performed, but he survived only four months.

Pathological Report.—Most of the matter that was sent for examination consisted of blood and fibrin, though in some cases there were collections of epithelial bodies that were closely packed together, and gave the appearance of true carcinoma. The particular class to which this case should be referred seems a matter of doubt.